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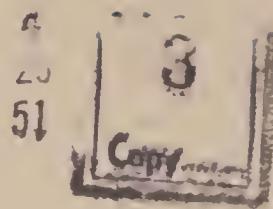
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FOREIGN ECONOMIC ADMINISTRATION.
Office of Food Programs



ECONOMIC SURVEY OF CONTINENTAL FRANCE
BY REGIONS

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January 1945

ECONOMIC SURVEY OF CONTINENTAL FRANCE

BY REGIONS

Sources of Information:

1. France Zone Handbooks, Foreign Office and Ministry of Economic Warfare, London, W. I.
2. The Combined Working Party on European Food Supplies, American Embassy, London
3. The National Foreign Trade Council, New York City, New York

Foreign Economic Administration
Bureau of Supplies
Office of Food Programs

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NOTE:

The information contained herein is based on the data available to this office through the above mentioned sources of information (collected in 1944).

It is not complete, and not brought up to date in regard to the current situation in France.

January 1945

Table of Contents

REGIONS AND DEPARTMENTS

	<u>Page No.</u>		<u>Page No.</u>
MARSEILLES	1	ROUEN	65
LYONS	6	RENNES	70
PARIS	14	ANGERS	76
LAON	25	LIMOGES	82
LILLE	30	TOULOUSE	89
CHALONS	38	BORDEAUX	97
NANCY	43	POITIERS	107
ALSACE	46	DIJON	115
ORLEANS	56	MONTPELLIER	122
CLERMONT	61		

* * * * *

Subdivisions - page numbers:

<u>Agricultural</u> <u>Machinery</u>	Lille, 30; Alsace, 47; Orleans, 56; Clermont, 61; Rouen, 65; Angers, 76; Toulouse, 90; Poitiers, 107; Mont- pellier, 122/123.
<u>Ballbearings</u>	Lyons, 8; Paris, 14; Bordeaux, 98.
<u>Breweries and</u> <u>Malt</u>	Lyons, 12; Paris, 17; Laon, 28; Lille, 34/35; Chalons, 42; Nancy, 44/45; Alsace, 52; Orleans, 60; Toulouse, 95/96; Dijon, 120.
<u>Cereals and Paste</u>	Marseilles, 3; Lyons, 9; Paris, 16; Laon, 27; Lille, 35.
<u>Chemicals</u>	Marseilles, 1; Lyons, 7/8; Paris, 14; Laon, 25; Lille, 32; Chalons, 39; Nancy, 43; Alsace, 48; Orleans, 56; Rouen, 65; Rennes, 70; Angers, 77; Toulouse, 91; Bordeaux, 98; Poitiers, 108.
<u>Chicory and Hops</u>	Lille, 32, 35; Chalons, 39; Nancy, 44; Alsace, 46/47.
<u>Coal</u>	Marseilles, 1; Lyons, 6/7; Paris, 14; Lille, 30/31; Alsace, 46/47; Cler- mont, 61; Toulouse, 90; Montpellier, 123.

Table of Contents, continued

<u>Cocoa, Chocolate, and Biscuits</u>	Paris, 18; Lille, 35; Chalons, 42; Nancy, 45; Toulouse, 96; Bordeaux, 105.
<u>Cold Storage</u>	Lyons, 13; Paris, 19; Laon, 28; Lille, 36; Bordeaux, 106.
<u>Crops</u>	Marseilles, 1; Lyons, 8; Paris, 15; Laon, 26; Lille, 32/33; Chalons, 39; Nancy, 44; Alsace, 50; Orleans, 57; Clermont, 61/62; Rouen, 66; Rennes, 71; Angers, 77/78; Limoges, 83/84; Toulouse, 91/92/93; Bordeaux, 99/100/101; Poitiers, 108/109; Dijon, 116/117; Montpellier, 124.
<u>Current Food Positions</u>	Paris, 20; Alsace, 54/55; Clermont, 63; Toulouse, 93/94; Bordeaux, 101/102; Poitiers, 110.
<u>Dairy Industry</u>	Marseilles, 2; Lyons, 9/10; Paris, 17/18; Laon, 28; Lille, 33, 35; Chalons, 40, 42; Nancy, 44; Alsace, 52, 54; Orleans, 59; Clermont, 64; Rouen, 67; Rennes, 74; Angers, 80; Limoges, 87; Toulouse, 96; Bordeaux, 105; Poitiers, 108, 110, 113, 114; Dijon, 116, 120, 121; Montpellier, 123, 125, 126.
<u>Edible Oils</u>	Marseilles, 1, 3; Lyons, 12; Laon, 28; Lille, 35; Alsace, 51; Orleans, 59; Angers, 80; Bordeaux, 106.
<u>Fertilizers</u>	Laon, 25/26; Lille, 30; Alsace, 46, 48, 49; Clermont, 62; Rouen, 66; Rennes, 70; Angers, 77; Limoges, 82; Toulouse, 91; Bordeaux, 98, 100; Poitiers, 108/109; Dijon, 116; Montpellier, 124.
<u>Fishing</u>	Marseilles, 5; Lyons, 13; Laon, 28; Lille, 36; Rouen, 69; Rennes, 73/74; Angers, 81; Toulouse, 96; Bordeaux, 105; Poitiers, 112/113; Montpellier, 126.
<u>Food and Prices</u>	Paris, 19/20; Alsace, 54.

Table of Contents, continued

Food Canning

Marseilles, 4; Lyons, 10/11/12; Paris, 18; Lille, 35; Nancy, 45; Alsace, 50, 51, 53; Orleans, 59; Clermont, 63; Rouen, 69; Rennes, 73/74/75; Angers, 80/81; Limoges, 86/87; Bordeaux, 97, 98, 104; Poitiers, 111; Dijon, 119/120; Montpellier, 126.

Food Consumption

Marseilles, 2; Lyons, 8; Paris, 19; Laon, 29; Lille, 32/33; Nancy, 44; Alsace, 50; Orleans, 58; Rouen, 67; Rennes, 72; Angers, 78/79; Limoges, 85; Toulouse, 92; Bordeaux, 101/102; Poitiers, 110; Dijon, 118; Montpellier, 124, 126, 127.

Fruits and Vegetables

Lyons, 8; Orleans, 59; Clermont, 63; Rouen, 69; Rennes, 71; Angers, 80/81; Limoges, 86/87; Bordeaux, 104; Poitiers, 108, 109, 111; Montpellier, 123, 126.

General Engineering

Lyons, 7; Alsace, 47; Orleans, 56; Rouen, 65; Angers, 76; Toulouse, 90; Bordeaux, 98.

Glass Works

Lyons, 8; Nancy, 43; Alsace, 47; Bordeaux, 99.

Grain Milling

Marseilles, 1/2/3; Lyons, 8/9; Paris, 15/16; Laon, 26/27; Lille, 33/34; Chalons, 41; Nancy, 44/45; Alsace, 50/51; Orleans, 58; Clermont, 63; Rouen, 67; Rennes, 73; Angers, 79; Limoges, 85/86; Toulouse, 94; Bordeaux, 102; Poitiers, 111; Dijon, 118/119; Montpellier, 124.

Iron Ore

Lille, 30; Nancy, 43; Alsace, 46/47; Rouen, 65; Angers, 76; Montpellier, 122.

Labor

Alsace, 50; Angers, 77; Limoges, 82/83; Toulouse, 91.

Land Tenure

Paris, 15; Lille, 32/33; Rennes, 71; Angers, 77; Limoges, 83; Toulouse, 91/92; Bordeaux, 99/100; Poitiers, 108; Dijon, 115.

Table of Contents, continued

<u>Land Utilization</u>	Laon, 25/26; Rouen, 65/66; Rennes, 71; Angers, 77/78; Limoges, 83/84; Toulouse, 91/92; Bordeaux, 97, 99, 100; Poitiers, 107; Dijon, 115/116; Montpellier, 122/123.
<u>Leather</u>	Lyons, 7; Alsace, 50; Angers, 77; Limoges, 82; Toulouse, 91; Bordeaux, 98; Poitiers, 108.
<u>Livestock</u>	Marseilles, 2; Lyons, 8; Laon, 26; Orléans, 57/58; Clermont, 62/63; Rouen, 66/67; Rennes, 72; Angers, 78; Limoges, 84/85; Bordeaux, 101; Poitiers, 110; Dijon, 117/118.
<u>Locomotives</u>	Laon, 25; Lille, 30; Chalons, 38; Poitiers, 107.
<u>Market Gardening</u>	Lyons, 8; Paris, 15; Laon, 26; Lille, 33; Alsace, 53; Rouen, 69; Rennes, 71, 75; Angers, 77, 80, 81; Limoges, 86/87; Toulouse, 94/95; Poitiers, 108; Dijon, 116, 119, 120; Montpellier, 123.
<u>Metallurgy</u>	Marseilles, 1; Lyons, 7/8; Laon, 25; Lille, 30; Chalons, 38; Nancy, 43; Alsace, 46/47; Clermont, 61; Rouen, 65; Rennes, 70; Angers, 76; Limoges, 82; Toulouse, 90; Bordeaux, 97; Montpellier, 123.
<u>Mineral Oils</u>	Marseilles, 1; Alsace, 47, 49; Rouen, 65; Angers, 77; Bordeaux, 98.
<u>Miscellaneous</u> <u>Food Industries</u>	Lille, 35/36; Alsace, 53; Clermont, 64; Limoges, 88; Bordeaux, 106; Dijon, 118/119.
<u>"Ostbund"</u> <u>German Org.</u>	Laon, 26; Nancy, 44.
<u>Paper</u>	Lyons, 7; Laon, 25; Nancy, 43; Alsace, 48; Limoges, 82; Toulouse, 91.
<u>Population</u>	Lille, 32; Alsace, 46; Orleans, 56; Limoges, 83; Toulouse, 89; Bordeaux, 100; Poitiers, 108; Dijon, 115; Montpellier, 122/123.

- e -

Table of Contents, continued

<u>Rubber</u>	Paris, 14; Laon, 25; Clermont, 61; Bordeaux, 99.
<u>Salt</u>	Lille, 36; Nancy, 43; Alsace, 47/48.
<u>Shipbuilding</u>	Marseilles, 1; Rouen, 65; Angers, 76.
<u>Soap Works</u>	Marseilles, 1, 3; Bordeaux, 98.
<u>Sugar Industry</u>	Marseilles, 4; Lyons, 12; Paris, 16; Laon, 27/28; Lille, 34; Chalons, 41/42; Nancy, 44; Alsace, 51; Orleans, 58/59; Clermont, 64; Rouen, 69; Bordeaux, 103/104; Poitiers, 109; Dijon, 117, 120.
<u>Textiles</u>	Lyons, 7; Paris, 14; Laon, 25; Lille, 30/31; Chalons, 38; Nancy, 43; Alsace, 46/47; Rouen, 65; Limoges, 82.
<u>Tinplate</u>	Rennes, 70; Angers, 76; Bordeaux, 97/98.
<u>Tobacco</u>	Alsace, 50; Limoges, 84; Toulouse, 93.
<u>Transportation</u>	Paris, 21/22/23/24; Lille, 37.
<u>Wine Industry and Cider</u>	Marseilles, 4; Chalons, 39/40/41; Alsace, 50/51/52; Orleans, 60; Clermont, 63; Rouen, 68; Rennes, 74; Angers, 79; Limoges, 87/88; Toulouse, 95/96; Bordeaux, 99, 102, 103; Poitiers, 108, 113; Dijon, 119/120; Montpellier, 124/125.
<u>Yeast</u>	Lyons, 12; Paris, 17; Lille, 36; Nancy, 45.

The Marseilles Region

Departments: Hautes-Alpes
 Basses-Alpes
 Alpes-Maritimes
 Bouches-du-Rhone
 Gard
 Var
 Vaucluse

The department of the Hautes-Alpes is in the province of Dauphine. The departments of the Basses-Alpes, Alpes-Maritimes, Var and Bouches-du-Rhone are in the province of Provence. The department of Gard is in the province of Languedoc. The department of Vaucluse is in the province of Venaissin.

Industrialization:

Not highly industrialized. Contains many tracts of barren land in the Alpine zone and in the area of the Rhone delta. Industry is concentrated into two main areas:

I. The Marseilles Area

1. Bouches-du-Rhone district.

- (a) Alumina plants
- (b) Chemical factories
- (c) Vegetable oil mills
- (d) Soap works
- (e) Flour mills
- (f) Marine engineering shops, etc.

(2) The Etang de Berre district

- (a) Aircraft works
- (b) Mineral oil refineries
- (c) Chemical factories
- (d) Shipbuilding activities

II. The Ales Area (Gard)

- (a) Coal mines
- (b) Metallurgical works

Agriculture:

The region is important as a producer of fruit and vegetables. It supplies a very large percentage of the French output of olives and OLIVE OIL (75%).

On account of unfavorable climatic conditions and unfertile soil in some parts, few bread cereals and potatoes are grown and no sugar beet.

The number of livestock raised is small and the dairying industry is negligible.

The region is far from self-sufficient in the matter of essential foodstuffs (cereals, sugar, potatoes, fats), however, there are extensive food processing works in and around Marseilles.

Food Processing Industries

The Marseilles Region produces only very small quantities of cereals, but there are important flour milling facilities in the Marseilles area, which in normal times relied on the large imports of North African wheat.

There are many small mills scattered throughout the area, to deal with the local supplies of grain. The official 1936 statistics give the number in each department as follows: Basses-Alpes, 58; Hautes-Alpes, 44; Alpes-Maritimes, 74; Bouches-du-Rhone, 95; Gard, 86; Var, 43; Vaucluse, 66.

At first these figures appear high, but it must be emphasized that they are mainly very small local concerns, and their total of 460 mills represents rather less than 4% of the number of mills in the whole of France.

Apart from the small concerns, some of the more important flour mills are:

<u>Company</u>	<u>Location of Mill</u>	<u>Annual Capacity in tons of Flour</u>
Grands Moulins de Paris	Port Saint Louis du Rhone	48,200
Grands Moulins de Marseilles	Marseilles (Marselles)	48,200
Semoulerie Sainte Auguste	(Chenun de St. Pierre)	48,200
Moulins d'Arenc	Marseilles (Ave. d'Arenc)	31,300
Lombard	Marseilles (Rue Loubon)	Over 24,000
Maiseries de la Mediterranee	Marseilles	Over 24,000
Minoterie et Semoulerie St. Bernard	Marseilles	Over 24,000
Semoulerie Nouvelle St. Georges	Marseilles	Over 24,000
Union Commercialle & Industrielle	Marseilles	Over 24,000

<u>Company</u>	<u>Location of Mill</u>	<u>Annual Capacity in tons of Flour</u>
Pierre Maurel, Moulin des Marroniers	La Valentine Marseilles	Over 24,000
Ferrand & Renaud	Bellevue St. Just, Marseilles	Over 24,000

Cereal Manufacturing

The chief centers for the fabrication of macaroni, etc., are Marseilles and Nice, with smaller concentrations in the Toulon area, and in the Department of Vaucluse. The cereal manufacturing industry was important in this region before the war. The North African wheat was used in these factories, so that the industry will probably be at a low ebb now that the supplies have been cut off.

Vegetable Oils

There are important vegetable oil mills in Marseilles and district, and subsidiary ones in the Nice area. Before the war 25 factories, employing 10,000 workers, treated approximately 700,000 tons of oil-seeds annually. The seeds treated included: ground nuts, copra, palm kernels, and linseed. Some 75% of French olive oil is produced in this area. The industry is carried on in small village centers, because the transportation of olives for processing causes bruising of the fruit.

The bottling of olives is also important ((Nimes in the Department of Gard). The olives used for bottling are small, but of a high quality.

Oil and Soap Works

The soap industry of Marseilles was established in the 17th century by Louis XIV (Colbert). The soap tradition of Marseilles was preserved and the use of local oil was superseded in modern times by the import of oil-seeds from Africa. The African oil-seeds fall into two groups:

- (a) the liquid oils, including ground nut oils, sesame, cottonseed, etc. (also olive oil);
- (b) the hard oils, including copra and palm kernel oil.

Marseilles has about 50 soap factories and about 95% of them utilize hard and liquid oils.

Two thirds of the French seed crushing and vegetable oil refining has been carried on in the Marseilles area. There are some 50 mills, and both edible and industrial oils are produced. From the better quality seeds the residual cake is used as cattle feed, while from the meal remaining from the crushing of lower quality seed, fertilizers are produced.

Sugar Refining

No sugar beet is grown in this region, so there are no sugar mills. There is one very important sugar refinery in Marseilles, Soc. de Raffineries du Sucre de St. Louis, (imported sugar). Two other refineries in Marseilles, the Raffinerie de la Mediterranee and the Raffinerie de St. Charles, were already closed before the war.

Wine and Liqueurs, etc.

Four departments in this region are wine-producers on an industrial scale, (Gard, Var, Bouches-du-Rhone, Vaucluse). It is preceded by the region of Montpellier in the production of wine in France. Though it is rich in natural alcohol, the production of industrial alcohol is limited to Marseilles. (*) There are three important breweries in Marseilles and others in Toulon and Nimes.

Canning

The large production of fruits and vegetables in the region has given rise to a considerable canning and preserving industry, concentrated in the Departments of Vaucluse, Bouches-du-Rhone, and Gard.

1938 Statistics

Department	Canning Factories				Jam Factories	
	Meat	Vegetables	Fruit	Various	Types	
Basses-Alpes	1	--	--	--	1	1
Hautes-Alpes	--	--	--	--	1	1
Alpes-Maritimes	2	2	3	5	--	--
Bouches-du-Rhone	3	11	3	4	1	
Gard	1	1	20 (**)	--	1	
Var	--	--	--	--	--	
Vaucluse	3	16	20	13	26	

(*) Marseilles is the center for the production and distribution of liqueurs, vermouths, apertifs, and spirits.

(**) 15 of these for olives.

Fisheries

Marseilles was the chief fishing center of the region before the war. Its annual catch was only 4,000 tons, a little over 1% of the French total. Toulons, Nice, and Martignes contributed further 2,000 tons annually. Little fish was being brought into the ports due to the German ban on fishing (later restrictions on night fishing). Two important fish markets were demolished by the Germans:

1. The old Halle Vivaux.
2. The modern Pecheurs Professionnels.

There is no important canning or preserving of the Mediterranean fish. Before the war there were factories at Port de Bouc and Miramas for salting and drying of cod, which was imported from Newfoundland, Saint Pierre, and Miquelon.

The Lyons Region

Departments: Saone-et-Loire, Loire, Ardeche, Haute-Savoie, Savoie, Jura, Ain, Rhone, Isere, Drome

The departments of Saone-et-Loire and Ain are in the province of Bourgogne.

The department of Jura is in the province of Franche Comte.

The departments of Loire and Rhone are in the province of Lyonnais.

The departments of Haute-Savoie and Savoie are in the province of Savoie.

The department of Ardeche is in the province of Languedoc.

The departments of Drome and Isere are in the province of Dauphine.

Industrialization:

The Lyons region has no economic unity. It can be divided into four main areas of industrial activity:

- I. The St. Etienne Area.
- II. The Le Creusot Area.
- III. The Lyons Area.
- IV. The Grenoble Area.
- I. The St. Etienne Area, Department of Loire including the Givors District in Rhone.
 - (1) Coal Mines (*).
 - (2) Metallurgical and Engineering Works.
 - (3) Chemical Works
 - (4) Textile Industry (Silk & Rayon)

(*) There are 3 main coal basins in France:

- (1) The Northern Coalfield - 28 mil. tons (60% of French total production);
- (2) The Moselle Coalfield - 6 mil. tons (13% of French total production); Lyons Region:
- (3) The Loire Basin Coalfield - 3.23 mil. tons (7% of French total production) and
- (4) The Saone-et-Loire Basin Coalfield - 2.3 mil. tons (5% of French total production). The remaining production was derived from various small basins.

The total pre-war coal production of France was about 46,000,000 tons a year. France, however, has always been deficient in coal and was obliged to rely on imports from Germany, Great Britain and Belgium for about 33% of her consumption requirements, which amounted to an average of 70,000,000 tons annually.

(**) Industrial chemicals, ammonia, ammonium sulphate, benzine, nitric acid, liquid oxygen, acetylene, etc.

II. The Le Creusot Area (Department of Saone-et-Loire).

- (1) Coal Mines
- (2) Heavy Metallurgical Works (Schneider concern) (*)
- (3) Bronze and aluminum foundries.
- (4) Rolling Mills.
- (5) Misc. General Engineering (Bicycles, factory equipment)
- (6) Various other factories (household utensils, etc.)

III. The Lyons Area (Department of Rhone, not including district of Givors).

- (1) Metallurgical Industry (Engineering).
- (2) Electrical Engineering Works.
- (3) Chemical Industry (**).
- (4) Textile Industry (Silk). (***)
- (5) Leather Industry (****).
- (6) Paper Mills (*****).

(*) Iron and ore and non-ferrous metals used in the production of alloys have to be imported here from other parts of Metropolitan France.

(**) The Lyons Area is one of the most important centers of the chemical industry in France. Heavy chemicals, dyes, explosives, paints, varnishes, glue, gelatine, phosphorus, fertilizers, pharmaceutical products are the most important ones.

(***) The Region has a fairly well developed textile industry, the most important branch being that dealing with silk. The Manufacture of rayon continuous filament and staple fibre, too, plays an important part, and a small cotton and wool industry is there.

(****) The pre-war France had a leather industry of some importance, the consumption in terms of leather equivalent in 1938 being between 60,000 and 65,000 tons. A certain proportion of the hides and skins were imported.

The present consumption cannot be at the rate of more than 40,000 tons per annum, and it should be noted that according to agreements made with the Germans some 70 percent of the total production was handed over either in the form of hides and skins or as finished or semi-finished products.

(*****) France in normal times, had to import considerable quantities of paper. Pulp was also imported. A few of the mills in the Lyons area producing their own pulp (Papeteries du Domeynon, Papeteries du France, etc.). Some of the mills may be operating on waste paper, straw, etc.

IV. The Grenoble Area - (the remainder of the region).

- (1) Electro - Metallurgical Industry.
- (2) Electro - Chemical Industry.
- (3) Constructional Engineering.
- (4) Chemical Works.
- (5) Paper Mills.
- (6) Ball-bearing factory.
- (7) Various other factories - pipes, (Yura), glass, bricks, and tiles, etc.

Agriculture:

The Region as a whole has a fair agricultural importance.

Cattle rearing and dairying are highly significant in the Alpine departments, and the Jura. The cattle of this region represent nearly 10% of the French total (Abondance, Tarentaise and Maurienne). The number of pigs is high, about 10% of the hog population in France.

Mixed farming is carried on in the lowlands, bordering the Rhine, while particularly in the departments of Rhône and Loire, market gardening and fruit growing predominate.

The region's wheat production is insufficient for requirements. The region's rye output represents 14% of the French total rye crop, but does not cover the region's requirements. Sugar beet production is small and negligible. Over 12% of France's potato supply is produced here (noted for their quality). The region has usually an annual surplus of about 250,000 tons of potatoes. Production of olives is about 5% of the French total. The output of fruit growing and market gardening is not great, but good (6% of the total French land under such cultivation). Quantity production of wine reaches 8% of the French output.

Generally speaking, the region with its high industrial population, is far from self-sufficient, in the matters of essential foodstuffs, especially cereals, fats and sugar.

Food Industries

Flour Milling:

Flour mills in this region are small and scattered. Lyons and St.

Etienne, however, are milling centers of some size.

<u>Firm</u>	<u>Location</u>	<u>Tons of Flour annually</u>
Grand Minoteries Lyonnaises.	Villeurbanne (Rhone)	28,900
Grand Minoteries les)	Lyons "	--
Fils de Joseph Convert)		28,900
Aulagnon et Cie - Minoterie	39 Rue des Acieries,	There are also
Stephanoise	St. Etienne	excellent facili-
		ties for storing
		grain and wheat
		in silos.
Clechet - Brogny, Annecy (Haute-Savoie)		--
Gond Tony et Cie - Annecy (Haute-Savoie)		--

Cereal Manufacturing:

The chief center for the fabrication of noodles is Lyons, with smaller concentrations in and around Grenoble.

<u>Firm</u>	<u>Location</u>	<u>Remarks</u>
Soc. Gen. de Pates Alimentaires de France	Lyons	Semolina, noodles
A. Cardot et H. Berquet - Ave. Lacassagne	Lyons	Noodles
Carnet Freres et Cie - Quai de l'Industrie	Lyons	Noodles
Ets. Ferrand et Renaud - Cours Garbetta	Lyons	Noodles
Milliat Freres - Rue Mouillard	Lyons	Noodles
Ets. Cartier-Millon - Grenoble (Isere)		Semolina, noodles
F. Reygnion - (Isere)	Vienne	Semolina
Ch. Creux (Isere)	Grenoble	Noodles
Devron (Isere)	Grenoble	Noodles

Dairy Products:

The Lyons Region's milk supplies were nearly adequate in peace time to cover the rural and urban requirements. Although milk is supplied to all the large industrial centers, about 5/6ths of the Savoie output is utilized for cheese and butter making. Some 22% of France Cheese is made in that region; nearly 3/4ths of the total output comes from the Alpine departments.

The chief cheeses are SAVOIE and JURA, GRUYERE, EMMENTHAL and COMTE'; BEAUFORT and MONTCEVIS BLEU (GORGONZOLA). The latter, made from goats' and cows' milk, is produced chiefly in Haute-Marienne and Haute-Tarentaise. BLEU DE GEX is exported in quantity, as are many wrapped cream cheeses around Annecy and Chambery. Here, too, have arisen satellite industries, such as the manufacture of milk powder, condensed milk and chocolate. Rumilly, in the rich plain of Albanais, is an important manufacturing center. Butter is not produced in large quantities, and is retained entirely for local consumption.

The region's food industries are not on a large scale. Surpluses are mainly consumed locally.

Canning:

Canning is confined primarily to luxury products, such as asparagus and truffles. Around Rhone, fruit and vegetables, grown locally, peaches, tomatoes, globe artichokes, were important to this industry before the war, and all materials, except sugar, were readily available for manufacturing purposes. Canned meat are not produced in large quantities, though at Lyons canned ham is a specialty.

<u>Firm</u>	<u>Location</u>	<u>Remarks</u>
	<u>Rhone</u>	
Blanchard et Cie	12 Rue du Docteur, Crestin, Lyons	Fruit Canning
Noguier-Venois	Lyons	Canned Hams and
Ets. Lyonnaise Arar	Lyons	Mfrs. of ice.
B. Gremmi	Lyons	Canned hams, al Sausages
Michel et Clement	7 Rue de Quatre Chapenau	Fruit Preserves
Chorliet et Grizaud	Lyons	Canned Hams
Concernes Lenzbourg	91 Ch. de St. Priest, Lyons	Preserves
Servagnat, Michel et Clement	Lyons	Fruit Canning
Mottet et Cie	117 Anatole-France	Fruit Preserves
M. Brunier et Freres	Lyons	Fruit bottled in brandy.
V-ve Fallor	Lyons	"
M. Fosserier	Lyons	"
S. A. La Regionale	14 Rue du Plat	Fruit Preserves
Fouchet Fils et Neyrat	Lyons	Fruit bottled in brandy.

<u>Firm</u>	<u>Location</u>	<u>Remarks</u>
E. Vincent	Lyons	Fruit bottled in brandy.
Manufacture Lyonnaise de Confiserie	348 Rue Boileau Lyons	Jams
Paul Vallon	10 Rue des Tuilleries Lyons	"
Produits S.A.P.	14 Rue des Tuilleries Lyons	"
Ets. C. Rousseau	Lyons - St. Claer	Canned meat, corned beef, peas beans, etc.
Les Fils d'Eugene Mottet	Villeurbanne	Jams and preserves.
		Fruit Canning.

Saone-et-Loire

Union Maraichere	St. Marcel-les-Chalon	Important factor in canning vegetables for Germans. Very Modern. 300 workers.
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Loire

Genchard, Perrachon et Cie.	24 Rue de la Montat, St. Etienne	Jams
Durand Pere et Fils	Largentiere	Fruit Canning, Jams.
Ets. Clemant - Fangier	Privas	Canning and jam factory "Marons glaces"

Drome

Gourdol	Les Petits Robins, Livron	Pickles
Ej. Julien -	Montelemar	Canning factory.
Roulet et Fils	Nyons	Fruit Canning, Jams
Soc. des Produits de Dauphine et de Province	Nyons	Canning Factory, Jams
Mac Eveque	Romans	Bottled olivers, capers, vinegars.

<u>Firm</u>	<u>Location</u>	<u>Remarks</u>
	<u>Drome</u>	
L. Royaney Confiture d'Hermitage	Romans Tain-l'Hermitage	Canning Factory Jams
	<u>Isere</u>	
Clot	St. Hilaire-du-Rosier	Fruit Juices

Breweries:

Breweries are few and raw materials in any large quantities have to be imported. At Lyons there are four larger breweries and some other breweries are scattered through the various departments in the region. Three yeast manufacturers have their firms in Lyons and one of the large yeast concerns - the Ane. Ets. Gaetau Brun is located in Grenoble (Department of Isere).

Oil Seeds:

<u>Firm</u>	<u>Location</u>	<u>Remarks</u>
J. Cluzel	Ave. Marc Seguin, Annonay	Colza Oil
	<u>Isere</u>	
Veuve A. Ravel & Patou	Rives-sur-Fure	Nut, colza, olive oils, walnut oilcake.
M. Burriol	" " "	Nut & Olive Oil Oilcake
Joseph Cholat	" " "	Nut and Colza Oils
Maximin Ravel Aine	Voiron	Green Walnuts, nut oil.
	<u>Haute-Savoie</u>	
Bruyère	Passage-sur-Cheron Rumilly	Nut and hazel oils, oilcake.

Sugar Factories:

The region was even in pre-war days deficient to the extent of 9/10ths of its requirements. The Department of Saone et Loire (city Chalons-sur-Saone) has two large sugar factories and one is located in the Department of Isere.

Fishing: (Fresh Water)

Adequate supplies of fresh water fish were formerly available in the region, and found ready markets at Lyons and the large towns. Carp and trout come from the rivers of the Beaujolais. Trout, perch, and rainbow trout from the upper Saone.

Cold Storage Plants:

<u>Firm</u>	<u>Location</u> <u>Rhone</u>	<u>Remarks</u>
Entrepot Frigo, Lyon Frigo de Brotteaux	Rue Seguin, Lyons 84 Rue Crillon, Lyons	Capacity 1500 tons
Soc. Laitiere Modern ("Le Lait")	71 Court Albert Thomas 20 Rue Vauban 124 Rue de Seze, Lyons	Refrigeration plant for milk
Cooperative et Pastori- zation Laitiere	25 Rue Bivauger Lyons	Refrigeration plant for milk.
	<u>Loire</u>	
Frigo de St. Etienne (Soc. des Glaciers de Paris)	3 Rue Treflerie St. Etienne	Capacity 800 tons.
	<u>Drome</u>	
Gare Frigo, Regional	Ave. Victor Hugo Velence	----
	<u>Isere</u>	
Cold Storage Depot	Bourboin	

The Paris Region

Departments: Seine
Seine-et-Marne
Seine

The department of Seine is in the province of Paris (Ile de France).

The department of Seine-et-Oise is in the province of Ile de France, with exception of its southernmost part, which is in the province of Orléanais.

The department of Seine-et-Marne is in the province of Ile de France, but its northern and eastern parts are in the province of Champagne.

Industrialization:

The region is dominated from an economic point of view by Paris and its suburbs. Paris, as well as being the administrative and cultural center of French life, is a leading industrial center, though it should be noted, that within the limits of the former fortifications, the industries are mainly clean ones which would not affect either the aesthetic qualities or the tourist trade of the metropolis. The heavy industries are located in the Parisian suburbs, there being, generally speaking a greater concentration in the north and west than in the south and east.

The Paris area has the following important industries:

- (1) Constructional Engineering.
- (2) Mechanical Engineering (production of Diesel engines. of special significance).
- (3) Automobile Industry (Citroen, Renault).
- (4) Aircraft and Aero-engine industry.
- (5) Armament production.
- (6) Optical and precision instruments.
- (7) Ballbearings and machine bolts.
- (8) Electrical Industry.
- (9) Chemical Industries (St. Denis and Aubervilliers).
- (10) Pharmaceutical Industry
- (11) Rubber Industry.
- (12) Ready made clothing and dressmaking.
- (13) Jewelry.
- (14) Furniture.
- (15) Handwoven materials.
- (16) Ladies gloves and handbags and accessories.

There are thermal power stations in the area adequate to supply the whole region with electricity, but coal for their operation has to be imported from a distance, in normal times either from the North of France and Belgium, or from Great Britain.

There are important gas works in the region, and Paris and the suburbs have a good gas supply, both for industrial and domestic consumption, though here, again, the coal has to be imported.

It should also be noted that, as in the case with many large towns, much of the drinking water consumed in Paris, has its source at some distance from the metropolis.

Agriculture:

The Paris Region is situated in the center of the Paris Basin, in the middle of a dry tableland, cleft by depressions of undulating ground, bounded by richly-wooded slopes. It lies on the fringe of an important agricultural belt, famous for its wheat lands, sugar-beet production and cattle farming.

There is a certain amount of cattle raising, while in the areas near the capital, market gardening is of primary importance. The acreage under market-gardening, although but a small fraction of the Paris Region, is most important, as it represents over 5% of the national total (1/4 of the department of Seine is agricultural and less than 1/8 is arable). Holdings around the capital are small, 60% being under 10 hectares. In the Seine-et-Oise and in the Seine-et-Marne departments holdings over 100 hectares constitute 40% and 50% respectively (the average for France is 16%).

Crop Rotation:

A 6 or 3 course of rotation of wheat, oats, lucerne, wheat, oats and roots. Crop production flourishes in the 2 departments outside the Seine, wheat, oats, sugar-beet, and potatoes, in particular, are grown in the limestone plateau, and market gardening thrives in the wooded alluvial valleys, yields are generally high. Wheat averages 2.3 tons per hectare well above the French average of 1.6. Potatoes: 13.9 against France's figure of 11.3. Only sugar beets fall below the French average.

Food - Processing Industries

The department of Seine is negligible as a food producer, but many important food-processing industries are to be found in Paris, and in the suburbs of Paris. Food-processing factories of some significance are also in the departments of Seine-et-Oise and Seine-et-Marne.

Flour Milling:

There are many flour mills in the region, the greater number of which are situated in the department of Seine-et-Marne. In the Paris suburbs, however, there are three important ones. Following are some of the largest flour mills in the Paris Region:

<u>Firm</u>	<u>Location</u>	<u>Annual Capacity (tonnes)</u>
Grands Moulins de Paris	Paris, Quai de la Gare	192,500
Grands Moulins de Pantin	Paris, Pantin (Paris)	168,200
Grands Moulins de Bobigny	Bobigny (Paris)	24,100
Grands Moulins de Corbeil	Corbeil (Seine & Oise)	192,500
H. & P. Chasles, Moulins de Verneuil	Verneuil	24,100

Cereal Manufacturing:

Macaroni Factories (Pates Alimentaires)

<u>Firm</u>	<u>Location</u>	<u>Production</u>
Bertrand et Cie	Aubervilliers	All kinds of noodle, tapioca, rice, semolina
Ets. Bozon-Verdurey, A. S. Cartier-Millon	Maisons-Alfort Charenton	All kinds of noodle " " " "

Sugar Production and Refining:

The department of Seine-et-Marne and, to a lesser extent, the department of Seine-et-Oise, are sugar beet growing areas and there are eleven sugar factories in the former and nine in the latter. The largest of these are situated at Meaux, Bray-sur-Seine and Goussainville. In addition to these establishments, which prepare the locally grown produce for domestic consumption, there are in Paris two important refineries normally dealing mainly with important raw sugar. These are:

- (a) Lebaudy Sommier in the Rue de Flandre.
- (b) La Raffinerie François in the Rue Riquet.

Alcohol Distillers:

The important production of sugar-beet in the region has given rise to the establishment of a number of alcohol factories (distilleries) and it should be noticed that a number of the sugar factories have their own distilleries. There are, in all, about fifty distilleries in the Seine-et-Marne and thirty-five in Seine-et-Oise.

Breweries:

Paris is the center of an important growing industry of twenty four breweries in the region, ten have an annual production of more than 100,000 hectoliters, and these large ones with the exception of that at Melun, are in the Paris suburban belt.

Yeast Manufacture:

There are a number of yeast manufacturers in the region, the most important of which is the Fabrique de Levures, Sucre et Alcools de St. Quen l'Aumone, with works at St. Quen l'Aumone (Seine-et-Oise).

Dairy Product:

The annual milk yield per cow for each department in the region is exceptionally high as compared with the French average of 1,700 liters. In Seine the yield is more than double this figure (though the number of cows is negligible), while the other two departments average 2,800 and 2,400 liters respectively. Small quantities of butter are made mainly in the Brie.

BRIE CHEESE is the chief dairy produce of the region. Three quarters of the total output (in all, representing 2% of the French total cheese production) is produced in the Seine-et-Marne. The output is important rather for its quality and not quantity. As a result, this product is exported to Great Britain and, of course despatched to the Paris market. Generally, these cheeses are made in factories and not as would be expected, on the farm, whence the milk is collected. Marketing centers for this purpose are Meaux, Coulommiers, Melun, Mormant and Nangis. Although there are no large industrial dairies in the region, a number of important distributors, with factories in the dairying regions of Normandy or Brittany, have their headquarters in Paris or the suburbs.

Some of the principal ones are:

- (1) Charles Gervais, S. A. (Cond. milk, cheese, casein)
- (2) Laiteries Hauser, (Distributors of fresh milk, butter, cream, eggs, cheese, powdered milk).
- (3) Soc. du Lait Gloria, (Butter, cheese, condensed milk).
- (4) Soc. Laitiere Maggi. (Distributors of fresh milk, butter, cheese, powdered milk).
- (5) Soc. Netle. (Cond. milk, cheese, chocolate. The warehouses and distribution center in Saint-Guen).

(6) Lait Ofco, Saint Quen. (Past. milk, dried milk, cream).

(7) Soc. Laitiere Industrielle de Normandie. (Cond. milk, cheese, butter, dried milk).

Chocolate and Biscuits:

In normal times there were many important factories in Paris and suburbs (active). The more important ones are:

<u>Firm</u>	<u>Location</u>	<u>Production</u>
Chocolat Menier	Paris	Chocolate
Chocolat Francois Meunier	Levallois - Perret	Chocolate
Chocolat Suchard, S. A.	Paris	Chocolate
Felix Potin	Paris	Chocolate & Biscuits
Huntley & Palmers et Mc Vitie et Price	La Courneuve	Biscuits
Biscuits Olibet et Biscuits Guillout, S. A.	Arcueil	Biscuits

Canning:

The Paris Area, with its large urban population, is an important center of the canning industry. Meat, fish, fruit and vegetables are canned, much of the supplies coming from the nearby agricultural area.

Some of the main firms concerned in the canning industry are:

- (1) Julien Damoy, S. A., with factories at Troy and Paris (Quai de la Loire). This firm prepares canned foods of all descriptions and is a distributing agency.
- (2) Olida. Factories at Paris (Vaugirard), Levallois-Perret, (Epimey-sur-Seine). Ham, sausages, pork, fruit & vegetable canning, made its own cans at Levallois-Perret.
- (3) Petitjean Géy & Cie. Factory at Le Pré-Saint-Gervais. Canning of meat, fruit, vegetables and fish.
- (4) Geo. This firm owns a factory in Le Kremlin-Bicetre. Specializes in the canning of pork, hams, sausages, etc.
- (5) Felix Potin. Peas canning factories at Pantin. Chocolate, Confectionery, Biscuits, Important wholesale and retail grocery firm.

Cold Storage Plants:

<u>Firm</u>	<u>Location</u>	<u>Capacity (Tons)</u>
Entrepots Frigorifiques de l'Union	Clichy	14,000
Entrepots Frigorifiques de Vaugirard	Paris, Vaugirard	2,000
S.N.C.F. (Entrepots Frigorifiques de Paris Quai de La Gare	Ivry - Paris (13 eme)	3,000
La Glace Continentale - Boulogne	Billancourt	Not known
Soc. Ind. d'Alimentation "La Nationale" 76 Rue de Vivier	Aubervillier	Slaughter house & cold storage for meats
Entr. Frig. des Halles de Paris	Paris (1 er), 3 Halles (central)	Not known
Entr. Frig. Louis Blanc	Paris, 10 Rue Louis Blanc	Not known
Entr. Frig. Paris Bercy P.L.M.	Paris (12 eme), 2 Quai de Bercy	Not known

General:

Food Surpluses and Consumption

The region as a whole, with its overflowing industrial population, is deficient in every essential foodstuff.

In pre-war days wheat was imported from the Lille and Laons regions (Artois and Picardy provinces), and potatoes were obtained from the Rennes region (Brittany) and the Nancy region (Lorraine).

Sugar was transported from neighboring areas.

Meat & Milk supplies came to Paris from a very wide radius. It was estimated in 1936-38 that the region was deficient in:

Meat	320,000 tons	(approximately)
Milk	5,000 "	"
Wheat & Rye	750,000 "	"
Potatoes	1,000,000 "	"
Sugar	52,000 "	"
Fats	52,000 "	"
Wine	6,500,000 hectoliters	"

It was reported that at the end of 1943, stocks of bread, potatoes and farinaceous food in the city were adequate, but the fat, cheese and milk situation was bad.

The average daily milk requirements of 440,000 liters were just covered during the period January-August 1943. This estimate was for children and invalids only and no allowance was made for the provision of milk for the adult population. Of these deliveries, about 15% come from the Seine-et-Marne and Seine-et-Oise. Among other departments supplying Paris with milk were:

Aisne, Aube, Eure, Eure-et-Loir (17%), Oise, Somme and Sarthe.

Prices:

Producers' and Wholesale Food Prices

	Autumn 1939	Autumn 1943
	Francs per Quintal	
Wheat	197	6410
Rye	85	340
Barley	74	290
Oats	61	269
Maize	100	400
Potatoes	49	250
Sugar-beet	25	53
Sugar	334	643
Cattle (live weight)	660	990
Pigs (live weight)	998	2,930
Beef	1,180	1,800
Pork	1,428	4,015
Milk	151	330
Butter	1,491	5,800
Eggs (100)	68	236

The current position in this region is most serious (re-price situation). Wartime rationing has not succeeded in reducing consumption in the agricultural regions and increasing surpluses available for Paris and its environs. It is known that substantial quantities of food find their way to the Parisian black market and thence to the restaurants of the metropolis, though prices are usually very high.

Communications

Paris has developed as a center of inland communications both by reason of its geographical position and by the definite policy of centralization adapted by the State.

The physical features have facilitated the development of Paris as a road and railway center. The flat plateau of Brie and Beauce to the south are easily traversed by roads, and the Falaise de l'Isle de France to the east is pierced by a number of rivers, the Oise, Aisne, Marne, and Seine, which afford easy routes converging on Paris. - In the West particularly the plain bordering the Seine is broad, and rises very gradually to the low hills of the Collines du Perche, though to the south of Caen the watershed of the Collines de Normandie gives rise to somewhat steeper slopes. The main routes strike north or south of these hills, either following the coastal plain to Cherbourg and northern Brittany or cutting south via the natural routeways of the Loire tributaries.

Since the 17th century, in accordance with the centralization policy of the French monarchy, the road network of France has been constructed to converge on Paris. The capital therefore, is the nodal point from which radiate the main arterial roads, east Belgium, Luxembourg, Germany and Switzerland, south to the Mediterranean coast; west to the Atlantic ports and north to the Channel.

Roads:

The main roads can be briefly tabulated as follows:

- (1) Paris-Laon-Mauberge, and thence to Brussels.
- (2) Paris-Chalons-sur-Marne-Verdun-Metz. From Metz two roads branch to Luxembourg and Germany.
- (3) Paris-Sezanne-Nancy, and thence to Strasbourg.
- (4) Paris-Troyes-Chaumont-Belfort, and thence to Basle.
- (5) Paris to Sens where the road forks, one route branching south to Lyons and the Rhone valley via Auxerre, the other southeast via Dijon to Geneva.
- (6) Paris-Fontainebleau-Montargis-Nevers-Moulins-Lyons-Avignon-Nice. At Moulins a branch of the road strikes south via Clermont-Ferrand and Narbonne to Perpignan.
- (7) Paris-Orleans-Limoges-Toulouse and thence to the Spanish frontier.
- (8) Paris-Chartres-LeMans-Angers and Nantes.

(9) Paris-Chartres-Tours-Poitiers-Angouleme-Bordeaux to San Sebastian. At Trappes a road branches to Brest via Alencon and Rennes.

(10) Paris-Evreux-Caen-Cherbourg.

(11) Paris-Pontoise-Rouen-LeHavre. A branch road connects Pontoise and Dieppe.

(12) Paris-Beauvais-Abbeville-Boulogne-Calais-Dunkerque, and into Belgium via Furnes.

(13) Paris-Amiens-Dunkerque.

(14) Paris-Peronne-Cambrai-Lille. At Cambrai a branch of the road forks to Valenciennes, and then to Mons, Brussels, Linking the radial roads are two road girdles, the inner girdle running inside the boundaries of the city, and known as the outer boulevards, the outer girdle providing communication between the suburbs, so that traffic can circumvent the city and the radial roads are kept clear for out and in-going traffic. The outer girdle is so constructed that tunnels beneath the main roads out of Paris obviate the confusion which would be caused by cross-streams of traffic.

Railroads:

The importance of this area in terms of railway transport rests on the fact that Paris is the nodal point of all the French railway system and has always been the location of the headquarters of all the important railway-systems, except the erstwhile Alsace-Lorraine. In fact, however, the Alsace-Lorraine was amalgamated in 1937 with the Est Railway.

The consolidation of the six main-line railways of France, two State-owned and four company-owned, into the Government-owned French National Railway Co., or S.N.C.F., at the end of 1937, and the welding of the separate systems into one cohesive whole was only in the commencing stage in 1939.

Organizationally the S.N.C.F. was managed by a Board of Directors, on which the companies possessed representatives, and responsible to the Board was a "Directeur" or General Manager, previously the "Directeur de l'Exploitation" of the North Railway (Nord). He is assisted by an Assistant General Manager and 5 technical officers, responsible for civil engineering, mechanical engineering, operating, commercial and

purchases. These officers together virtually formed an Executive Committee.

The main arteries can be summarized as follows:

1

Region	Station	Area Served
Nord	Gare du Nord	Beauvais, Le Treport Amiens, Abbeville, Boulogne, Calais, Amiens, Arras, Hazebrouck, Dunkirk, Cambrai, Douai, Lille, Roubaix. St. Quentin, Aulnoye, Mons, Brussels. Aulnoye, Charleroi, Namur, Liege.
Est	Gare de l'Est	Reims, Mezieres-Charlesville, Luxembourg. Epernay, Chalons-sur-Marne, Metz. Bar-le-Duc, Nancy, Luneville, Strasbourg. Troyes, Chaumont, Belfort (Mulhouse, Basle, Berne).
Sud-Est	Gare de Lyon	Dijon, Lyon, Avignon, Marseille, Nice. Dijon, Dole, Besancon. Dole, Vallorbe, Lausanne. Dijon, Bourg, Amberieu, Geneva. Amberieu, Chambery, Modane, Turin. Avignon, Nimes, Montpellier, Sete. Montargis, Nevers, Moulins (Saint-Etienne, Vichy, Clermont-Ferrand).
Sud-Ouest	Gare d'Austerlitz*	Orleans, Bourges, Montlucon, Beziers. Orleans, Chateauroux, Limoges, Brive. Montauban, Toulouse, Narbonne, Cerbere, and Spain (Orleans, Blois, Tours, Poitiers, Angouleme, Bordeaux, Bayonne, Hendaye and Spain). Bordeaux, Pau, Tarbes. Tour, Saumur, Angers, Nantes, Saint-Nazaire.

(*) Gare d'Orsay closed to main-line traffic since 1940.

Region	Station	Area Served
Ouest	Gare Montparnasse	Chartres, Saumur, Niort, Saint, Bordeaux. Le Mans, Angers, Nantes, La Roche Nantes, Lorient, Quimper. Le Mans, Laval, Rennes (Saint Brieuc, Brest, Saint-Malo). Dreux, Laigle, Argentan, Flers, Granville.
Ouest	Gare St. Lazare **	Mantes, Evreux, Lisieux, Caen, Cherbourg. Vernon, Rouen, Le Havre. Pontoise, Dieppe.

(**) In normal times the Gare St. Lazare claims to deal with the heaviest passenger traffic of any main-line station in the world. The inner suburban services from this station are electrically operated on the third-rail system, while those from Montparnasse, Gare d'Orsay, and Austerlitz are worked on the overhead 1.500-volt D.C. system.

The Laon Region

Departments: Somme
Aisne
Ardennes
Oise

The department of Somme is in the province of Picardie. The northern part of the department of Aisne is in the province of Picardie, the central part is in the province of Ile-de-France, the southern part is in the province of Champagne. The department of Ardennes is in the province of Champagne. The department of Oise is in the province of Ile-de-France, with exception of its northernmost part, which extends into the province of Picardie.

Industrialization:

There is no great concentration of industry in the predominantly agricultural Somme, Aisne and Oise, though certain aspects of their industrial life are important.

(1) Aircraft Industry. (*) (Somme Dept.)

(2) Textile Industry. (**) (Somme Dept.)

(3) Repair of Locomotives. (***) (Aisne, Somme & Oise Depts.)

(4) Chemical Industry. (***)(Somme Dept.)

(5) Paper Mills. (Aisne & Oise Depts.)

(6) Synthetic Rubber Plants (Oise Dept.)

In the Ardennes the economy is evenly divided between agriculture and industry. The geographical situation of this department which is midway between the coal mining area of the north and the iron deposits of the east, has given rise to a metallurgical industry, whilst Sedan is an important textile center, specializing in heavy woolens.

(*) Albert district in the Somme Department. (The only center of this industry in France north of the Seine estuary area).

(**) Cotton velvets (Amiens), Flax, Jute, Hemp, Rayon mills in the Somme Department.

(***) Societe Nationale des Chemins de Fer Francais (S.N.C.F.F.) owns large locomotive repair depots in the three departments.

(****) The general agricultural nature of the region has resulted in a number of factories manufacturing chemical fertilizer. Special mention should be made of the deposits of phosphate of lime in the Somme, which have led to the establishment of a number of fertilizer factories (Super-phosphates-Synthetic-ammonia and calcium carbide).

Agriculture:

Agriculturally this region presents a striking contrast. In its central part, in the Oise and Aisne, it includes the very best of French farming and is highly mechanized according to French standards. It posses only 6.5% of the arable land of France, but it accounts for 12% of the national consumption of nitrogenous fertilizers, 11% of potash and 5% of phosphates. It is in the main a region of large farms and high farming and the principal production area for France's wheat and sugar beet. Wheat yields are everywhere high, averaging some 50% above the very low French average (1.6 per hectare).

In the west is the valley of the Somme and its tributaries cutting deep into the chalk plateau, the valleys being occupied with dairy farming and market gardening and the plateau with wheat and sheep.

In the east of the Ardennes department, is found a continuation of the arable belt and in addition north of the River Oise, there is a large grassland, dairying and cattle breeding area. In the eastern extremity in the Ardennes, there are also some comparatively primitive and backward districts.

The crop rotation is three course: Wheat-roots - Oats or the improved three course: Wheat - roots - Oats, Wheat - clover - oats (barley).

An important subsidiary and semi-agricultural activity is the cultivation of willows for the basket-making industries in the Somme and Oise.

Many farms were abandoned during the invasion in 1940. Some of the occupiers subsequently returned, in other cases farms were taken over by the Germans and amalgamated into large units for mechanical cultivation and run by the German Organization called "Ostbund" (500,000 acres).

It is known that the French wheat acreage even by 1943 had not recovered more than 4/5ths of the normal, the sugar beet acreage 2/3rds of normal. Also the acreage yields are likely to have fallen due to the lack of fertilizers.

The region contains more than its share of horses and sheep, but only a moderate number of cattle, and very few pigs and goats.

The dairy cattle are of Flemish, Norman and Frisian breed, with the Flemish predominating. In the Ardennes is found the small mountain breed known as the "Race Ardennaise." Milk is being sold to Paris, chiefly from the Oise department (nearly 3/5 of the milk supply). In the Somme department nearly half of the milk is turned into butter (French average 30%).

Food Industries

Though not so numerous, as in the northern Lille Region, food industries are of some importance in the Laon Region. The chief is the sugar beet industry.

Flour Milling:

Flour mills are important particularly at Amiens in the Somme and at St. Quentin in the Aisne Department. One of the largest grain mills in the region the "Grand Moulins de Clermont" is located in the city of Clermont, Department of Oise. Its annual production capacity of flour is over 24,000 tons.

The department of Somme and Aisne had before the war eight mills with a grain milling capacity of 25 to 50 metric tons per day. Twenty seven mills with a grain milling capacity of 10 to 25 m. tons per day and twenty mills with a capacity of 5 to 10 m. tons per day. Their estimated total milling capacity before the war was 254,200 metric tons of grain annually.

No data exists as to mills below five metric tons capacity, but it is known that a number of windmills and small country mills were in the Somme and Aisne Departments, in addition to the 55 grain mills enumerated above. The cities of St. Amiens and St. Quentin are also known for the manufacture of biscuits and starch.

Cereal Manufacturing:

The largest and well known cereal factory in this region is located at Montescourt and is making pates alimentaires (macaroni, etc.) out of durum wheat imported from North Africa.

Sugar Production and Refining:

The region has altogether about 70 sugar factories, some of which besides processing the local sugar beet, undertakes in peace times the refining of imported sugar.

At some sugar factories the molasses are utilized on the spot for the distillation of alcohol, while others send their molasses to distilleries, of which there are altogether 71 in the four departments.

The acreage restriction scheme, which has been operating since 1930 (agricultural "protection") has made it possible for factories to pay high prices for sugar beet, so that it is one of the most profitable crops available. Were it not for these restrictions a great deal more of sugar beet could be grown before the war in this region.

According to information received from the liberated areas the sugar factories have been short of sugar beet, partly because of reduced acreage and partly for lack of transport in getting beets to the factories.

Breweries, etc.:

There are numerous breweries and cider factories in the Somme & Aisne Departments (Picardie). The breweries rely mainly on imported hops and barley from the Beauce and from North Africa.

Cold Storage Plants, etc.:

There are large slaughter houses (abattoirs) and meat cold storage plants in the region, especially in Laon and Soissons in the Aisne Department. There is a union of meat and cattle wholesalers in the Somme Department which organizes its deliveries to Paris and the co-operative disposal of slaughter house offals.

Vegetable Oil Refineries:

Following are some of the plants in the Laon region:

<u>Location</u>	<u>Firm</u>	<u>Remarks</u>
Ham, Somme Dept.	Lefrant, Dargaud et Cie,	Linseed, colza oils.
Venette, Oise Dept.	La Nourylande	Linseed crushing cap.
Venette, Oise Dept.	Soc. Industrielle de Venette	35,000 m.tons annually Olive Oil and yeast.

Butter and Cheese Factories:

Most of the butter and cheese is made on the farms, but there is a substantial number of small butter and cheese factories throughout the Somme and Aisne Departments. These factories have been lately unable to secure milk deliveries on a normal scale from farmers, because so many of the latter prefer making their own dairy produce and selling it on the black market.

Fishing:

Fishing is of negligible significance to this region, there being no important fishing ports on the coast of the Somme Department. Some fresh water fishing is, however, available in the Ardennes.

General:

The region is one of the principal food-producing regions in France, and the four departments have a surplus of almost all the staple foodstuffs. The Somme, Oise and Aisne normally have large export surpluses of wheat, potatoes, sugar, and smaller ones of milk and butter. The Aisne exports champagne wines and the Ardennes young cattle. The Ardennes is however, slightly deficient in wheat and meat, and very deficient in sugar.

Departments; Pas-de-Calais
Nord

The department of Pas-de-Calais is in the province of Artois. Its northwestern part constitutes the province of Boulonais. The southernmost part of its coastline protrudes into the province of Picardie.

The department of Nord constitutes the province of Flandre.

Industrialization:

The region contains the greatest industrial concentration in France, and the textile and metallurgical industries play a predominant role in its economy. The industrial concentration of this region has grown up in connection with the extensive coal field. The more important coal mines are in the department of Pas-de-Calais, the metallurgical and textile works are mainly situated in the department of Nord.

Metallurgy and Heavy Industry

The extensive coal supplies of the region have led to the development of an important metallurgical industry. There is little non-ferrous metal working, however, but iron and steel play an important role, as normally the ore could be easily obtained from Lorraine (Department of Meurthe-et-Moselle). The iron ore deposits of Lorraine are fairly accessible, and, if rolling stock were not available, could be brought to the area by inland waterway. The production of iron and steel can be classified under the following headings:

- (a) Pig iron
- (b) Steel ingots and castings
- (c) Iron and steel tubes
- (d) Steel plates

The construction and repair of locomotives and rolling stock is very important and there is a widespread heavy engineering industry (factory equipment). It should be noted that 2 important firms, Massey-Harris and Cima-Wallut manufacture agricultural machinery on a large scale.

The Textile Industry

The textile industry is of great importance in French economic life. It accounts for more than one million workers, and represents 23 percent of the total national economy. In 1937, 17 percent of the total value of French imports consisted of raw materials for the textile industry, and 13.5 percent of the exports of yarn, fabrics, and ready-made garments.

The Department of Nord held an important place in the French industry, especially in the production of worsteds and woolens, though the linen and cotton industries were also important. The Department of Pas-de-Calais was only of minor significance in the textile trade, with exception of the large viscose rayon mills and the lace industry of Calais.

Since the Armistice there has been little activity in the French textile industry. Most of the raw materials were imported, either from the U. S. A. like cotton, or from Australia and Argentine like wool.

Some of the cotton mills, however, are utilizing staple fiber, and it is possible that the worsted mills are incorporating continuous filament rayon of the fiber type into their manufacture.

In 1939, France stood third after Great Britain and the U.S.A. for the number of worsted spindles, having 2,330,000 out of a world total of 26,158,300. She stood fourth for the combined total of worsted and woolen spindles (Great Britain, U. S. A., Germany, France).

Coal Deposits

French hard or bituminous coal was derived from three main basins, but far exceeding the others in extent and importance was the northern coal field in the departments of Nord and Pas-de-Calais. During the 10 years before 1938 the annual French output of some 46 million tons had not varied to any great extent, and of this total some 60% was obtained from this region.

France, however, was obliged to rely on imports, mainly from Great Britain, Germany and Belgium, for about 33% of her requirements, which amounted to an average of 70 million tons annually.

French mineral rights belonged almost exclusively to the State, the mining companies worked concessions on the basis of a small rental and a royalty on net earnings. Large companies predominated.

Coke Ovens and By-Products Plants

In connection with the coal mining of the area, the mining companies and some metallurgical firms established coke ovens, which furnish coke for the metallurgical industries of the region. The majority of these are in the Pas-de-Calais Department, though some are to be found in the Nord Department.

Gas from the coke ovens is used for general distribution, and the region unlike the greater part of France, has a well developed gas-grid.

Most of the coke oven batteries have associated by-products plants, which include benzol refineries, synthetic ammonia plants, and tar distillation plants.

Chemical Industry

Apart from the plants treating coke oven by-products a number of pure chemical works are to be found in the region.

The Ets. Kuhlmann have three factories in the Nord Department and the most important one is the La Madelaine plant. It produces:

	Pre-war daily capacity-metric tons
Sulphuric Acid	200
Nitric Acid	180
Nitrate of Lime	150
Ammonium Sulphate	70 - 100
Ammonium Nitrate	30

Electric Power Supply:

The Lille Region has a large number of thermal power stations. It is one of the four chief producing areas for electric power in France, and has the main concentration of thermal plants.

Many of the power stations produce solely for general consumption, and feed directly into the main French grid.

Agriculture:

Farming must be reckoned one of the least important activities of this area. In the Department of Nord only about 10% of the working population is engaged in farming and in the Pas-de-Calais Department the proportion is less than 20% (the French average is 35%). The average yields of all the principal crops were among the highest in the country, while the quality of cattle and horses (Boulonnais) compared most favorably with other departments.

The two departments considered as a whole, in normal times, are self sufficient in wheat (the Nord imports some from the Pas-de-Calais Department) and in potatoes.

Both had a large export of refined sugar, the combined total exceeding 450,000 tons before the war (to other regions of France).

The Nord also exports chicory and beer, and the Pas-de-Calais Department oats. Both are deficient, but particularly the Nord, in live-stock products: Meat, Butter and Cheese. They imported from other

regions not far short of 100,000 tons of meat and probably some 5000 tons of butter.

The sugar and oats surpluses have not been available for export to the rest of France, because the Lille Region was a Zone under Special Military control. Three principal zones may be distinguished:

The first is that of the Flanders plain (Nord Dept.), characterized by having a very high production of land devoted to the so-called "industrial crops" (Sugar beet, flax, hemp, chicory).

The Second zone is that of the chalk land forming a very broad belt stretching right through the Pas-de-Calais from Cap Gris Nez to Bapaume. This country, which is always short of water and where the crops may be seriously affected by drought in some seasons, is devoted chiefly to cereals and sheep.

Thirdly, there are the pasture areas, one at each end of the region, that of the Boulogne hinterland with its horsebreeding, and that of the Ardennes with its cattle raising.

It should be remembered that dairying and market gardening are found everywhere in all the three zones and that nearly every farmer, even though he has a large part of his land under crops, derives an important part of his income from the sale of milk and butter.

The majority of farms in these two departments are medium sized, between 25-125 acres. Nevertheless, the larger farms, 100-500 acres, play an important role of the area, particularly by introducing new farming methods.

Food Industries:

Although the food industries of this region do not bulk large by comparison with the other industries, they constitute a significant proportion of the food industries of France as a whole.

Grain Milling:

Foremost is the milling industry, particularly in the Lille - Roubaix districts, concerned mainly in the milling of grain grown in the region.

Following are the () largest flour mills in this region:

Nord Dept.	Location	Firm	Capacity 193	
			Tons of wheat a day	Tons of flour a year
Annoeulin		Van Elslande Freres (Gr. Moulins du Don)	130	31,300
Bourbourg		Louis et George Duriez	100 (**)	24,000
Lille		Meunerie Lilloise	600	144,500
Marquette-lez- Lille		L. et E. Despretz (Minoteries de Marquette)	180	43,300
Prouvy-Thiant		Malteries Franco - Belges	120	28,900
Valenciennes		Grand Moulins du Nord	120	28,900

Sugar Factories, Refineries and Distilleries:

The sugar industry is only second in importance to the Laon Region. The number of factories is smaller than in the Laon Region (71 factories), there being 13 in the department of Nord and 12 in the department of Pas-de-Calais. It is believed that a few of these have been damaged by aerial attack. There are 4 sugar refineries in the Lille Region (Department of Nord), against 3 sugar refineries in the Laon Region.

At some sugar factories the molasses is utilized on the spot for distillation, others send their molasses to distilleries, of which there are over 50 in the two departments, some of them using grain as well as molasses.

Breweries and Malt:

There are over 700 breweries, nearly three quarters of the total number in France. Beer, which was first introduced by the English in the beginning of the XVII century, has become the standard drink of industrial workers throughout the north, the best known being the beers of Lille, Armentieres and St. Amand.

(*) Capacity over 24,000 tons of flour per year.

(**) Exact capacity not known, but over 100 tons per day.

The breweries rely on locally manufactured malt, which itself is an important industry. The production of malt in the Pas-de-Calais department alone is about 20,000 tons per year.

Chicory Factories:

There are many chicory factories, especially in the Calais - St. Omer-Dunkerque area, the annual output being some 4500 tons.

Chicory is widely used in France and Belgium as an admixture to coffee. These two departments in the Lille Region contribute 95% of the total French production of chicory.

Canning:

The canning and drying of peas is undertaken at Hazelbrouk, Bergues and elsewhere.

Dairying:

Butter and cheese are for the most part made not in factories but on farms, the best known local cheese being MAROILLES.

There is a margarine factory at Solesmes.

Vegetable Oil Mills.

There are numerous factories in this region manufacturing edible and industrial vegetable oils, oil cakes, soft soaps, glycerine, etc. 16 plants are located in the department of Nord and 10 plants in Pas-de-Calais.

Confectionery Factories:

The biscuit, chocolate and confectionery industry occupied a prominent place in the Lille Region.

The industry used in peace times some 15,000 tons of sugar, besides large quantities of flour, cocoa powder and other ingredients.

Misc. Industries:

Cereal manufacturing (pates alimentaires) can be found at Bethune, Cambrai and Douai.

A number of starch factories are located in Cambrai, Valenciennes and elsewhere.

There is a small production of yeast, cider, vinegar and mustard in the Pas-de-Calais Department.

Three large salt refineries are in St. Omer (Pas-de-Calais).

Mushrooms are grown in caves in the environs of Lille and form a notable export.

Fishing:

Fishing is carried on on a small scale from all the channel ports, but on a very substantial scale only from Boulogne (Pas-de-Calais Department).

In 1937 there were altogether on the coasts of Pas-de-Calais and Nord departments 620 registered fishing boats employing nearly 5400 men, and of these 4/5th operated from Boulogne.

The catch contributed nearly 20% of the French total and by value of the amount landed at Boulogne, was more than twice as much as at any other port in the country.

Boulogne specialized mainly on North Sea Herring and Mackerel, Dunkerque had an Iceland cod fishing fleet.

The salting establishments of herring, mackerel and cod at Boulogne employed several thousand workers. Cod liver oil was manufactured at Dunkerque.

During the war fishing activities have almost completely ceased and a large number of the vessels has been commandeered by the Germans for naval patrol work.

Cold Storage Plants:

<u>Location</u>	<u>Firm</u>	<u>Capacity (Tons)</u>
Dunkerque (Nord)	Entrepots Frigot de l'Union	3200 (*)
Lille (Nord)	S. A. Lilloise de Glace Pure	700
Boulogne-Sur-Mer (Pas-de-Calais)	Frigo, Beauren	800
" " "	Frigo, Descottes	700
" " "	Entrepots Frigo de l'Union	2800

(*) Damaged in 1940, available capacity not known.

General:

As the Lille Region is both a maritime and a frontier region, the question of communications is of primary importance. In peace time cross-channel communications were of greater importance (significance) than long distance sea routes, though between 1930 and 1939 the importance of Dunkerque as a wool-importing port, and as a port of outlet for the manufactured goods of the region, had grown considerably.

Land routes, both road and rail, connect the region with Belgium, Holland, and Germany. The canal system, the most extensively developed in France, is linked to the Belgian, and thence to the Dutch and German systems.

The Chalons Region

Departments: Marne
Aube
Haute-Marne

The departments of Marne and Aube are in the province of Champagne. The department of Haute-Marne is also in the province of Champagne, but its southeastern part protrudes into the province of Franche Comte and its northeastern part extends into the province of Lorraine.

Industrialization:

Industry is on the whole of minor significance in the region, though certain specialized branches are of importance.

The Chalons Region is essentially agricultural, and the heavy industries are of minor significance when compared with those in the more industrial part of France.

Metallurgical Industry:

The absence of deposits of coal and iron have made the possibility of the development of a large scale metallurgical industry economically unprofitable. The production of iron and steel castings is of fair importance in the department of Haute-Marne, but in the departments of Aube and Marne production is negligible. In the Haute-Marne and the Saint Dizier district is the most important heavy metal center.

Textile Industry:

The department of Marne has several wool-spinning and weaving mills. Reims (Marne department) has an important textile industry, which normally employed almost 20,000 workers. It is noted for the production of flannel, cashmere, merino luxury novelties, and a wool fabric known as "Reims cloth," the worsted and woolen industry in Reims, although important before the war, has never fully recovered from the set back it received in 1914-18, and was declining.

Troyes in the department of Aube is the main center in France of the hosiery industry. It is also known for the production of machinery for the hosiery industry, as well as of other textile machines and accessories.

Locomotive and Rolling Stock Repair Shops:

There are four locomotive and rolling-stock repair shops of importance in the region. At Eperney (department of Marne), the S. N. C. F. have an important repair center for rolling stock. Locomotives were at one time built here, but at present these workshops are concentrating on repair work.

Chemical Industry:

The chemical industry of the Chalons region is not of great importance. The small chemical industry is mainly concerned either with manufacturing artificial fertilizers for the crops or vineyards, or with utilizing locally grown timber.

Agriculture:

The Chalons Region is essentially agricultural and is, above all, famous as the Champagne country, though it has altogether a quite varied agricultural economy. Holdings are mainly large, though, in the Champagne districts, some of the smallest estates of the region are to be found. Some 16,000 hectares of vineyards are divided between as many proprietors.

About 5% of the total French wheat crop is grown in the Chalons Region, mainly in the Aube and Marne.

Some 6% of the total French production of oats are grown in the Chalons Region and are used for fodder.

In the Champagne Crayeuse, barley takes precedence over other cereals, its superior quality making it especially valuable for brewing.

Potatoes are not widely grown.

Market gardening is of significance, especially in the neighborhood of Reims and in the turf, fertile soil of the Vesle valley.

The asparagus and onions of Reims and Epernay are widely known.

Hops are not uncommon in the lower valley of the Langres plateau, and in the department of Aube agriculture is widely practiced.

Surplus products, as were available before the war, found a ready market in the industrial concentration of the Paris area.

In the pre-war period the Chalons region had a surplus of about 200,000 tons of wheat and rye, the bulk of which went to Paris and Dijon.

The potato deficit of about 40,000 tons annually was made up by imports mainly from the Nancy area and from Brittany (mainly new potatoes).

Small imports of sugar came from Laon.

Smaller deficiencies of fats and meat supplies were made good by shipments, chiefly from Normandy.

The wine shortage, which was produced by large export trade, was made up by imports from the south of France.

The annual milk production of the region normally amounted to some 4,000,000 litres, much of which was exported to the Dijon Region, and to Paris.

Wine Production:

The famous champagne vineyards are to be found in the ancient province of Champagne within a comparatively small and irregular triangle, Reims, Epernay, Chalons. The vineyards in the Marne valley in the vicinity of Epernay are known as the Vignobles de la Riviere, and those covering the hill - slopes above Reims, are the Vignobles de la Montagnes (the latter is the more important zone).

No wine is legally entitled to the name of Champagne, unless it is made from grapes grown in a strictly limited area within the ancient province of Champagne. The greater part of this area falls within the Chalons Region.

It includes:

- (1) The arrondissements of Reims and Epernay, the canton of Vitry, and 10 communes in the canton of Helitz-le-Maurupt (Marne).
- (2) About 80 communes in the department of Aisne. Other communes may call their wine "Champagne Deuxieme Zone."

They include:

- (1) Communes of the arrondissement of Saint - Menehould (Marne).
- (2) Communes of the arrondissement of Bar-Sur-Aube (Aube).
- (3) Communes of the arrondissement of Wassy (Haute-Marne).
- (4) Communes of the cantons of Chavanges and Bar-Sur-Scine (Aube).

A number of different types of vine are cultivated, and both black and white grapes are grown, they include:

- (a) Franc Pineau (Ay district)
- (b) Plante Gris, or Burot (around Verzy and Verzenay)
- (c) Epinette (Cote d'Avize and in the Cramant area)
- (d) Meunier (Epernay Valley)
- (e) Meslier
- (f) Garaïs (vineyards of Vertus)

Planting of the young vines takes place between November and April. In the course of two or three years the plants are ready for "layering" and subsequently for pruning and harvesting. Six years are generally required for the harvesting of a good crop.

The making of champagne is a slow process which demands great skill. It differs from still wines in that it is bottled at an early stage in the fermentation and completes its fermenting in the bottle. Thus carbonic-acid gas remains in the wine, and gives it its characteristic sparkling quality. The bottles have to be stocked neck downwards, and are shaken to facilitate the precipitation of sediment, which is frozen to the cork. The cork is removed, liqueur or syrup is added, and the bottles re-corked and wired.

The total French production of Champagne averages 400,000 hectoliters annually, produced from vineyards covering an area of about 10,000 hectares. In 1937, about 43,000,000 bottles were exported from the whole Champagne district, and of this, about 15,000,000 were sent outside France.

The vine harvest has been exceedingly good. The 1945-46 French crop was some 10,000,000 hectoliters greater than that of 1942-43, in spite of the deficiency of copper and sulphur.

Grain Milling:

Apart from the wine industry little food processing is carried on in the region. There are a number of flour mills in each department, but these are only small mills.

Sugar Industry:

The Reims district is the center of the sugar beet production of the region, and much of the crop is treated in the sugar factories of the

Aisne and Ardennes departments. In the department of Marne there are two sugar factories and two alcohol distilleries. The total output of the region is about 2.5% of France's gross production.

Breweries:

The region has several breweries, one at Troyes (Aube), six in the department of Marne, three of which are at Reims, and two in the department of Haute-Marne.

Biscuits, Chocolate & Confectionery Manufacture, etc.

The production of biscuits is of some importance in the region. The Aube has 11 factories, six of which are at Troyes, three at Bar-Sur-Aube, and two at Romilly-sur-Seine. Reims is the center, 16 of the 20 factories in the department of Marne, are situated in that town. It is also famed for its gingerbread.

Chocolate and confectionery are produced on a small scale, there being two factories at Troyes (Aube), five factories at Reims and one in the department of Marne.

Honey is produced at Troyes and at Dommartin-Sous-Hans in the Marne.

Troyes is also known for the manufacturing of Andouillettes, a type of sausage made from tripe.

Dairying:

Although the butter output is small, the quantity of cheese made in the region represents about 7-1/2% of the total French production.

BRIE is the most important type, and in pre-war times substantial quantities were exported both to Paris Halles and to England. GRUYERE cheese is also made in this region.

Departments: Meuse
Muerthe-et-Moselle
Vosges

The department of Meuse is in the province of Lorraine. Its western boundary includes a point of the province of Champagne.

The departments of Meurthe-et-Moselle and Vosges are in the province of Lorraine.

Industrialization:

The industrial area of the department of Meurthe-et-Moselle dominates the economic life of the Nancy region. This department has rich natural resources, the chief of which is the extensive iron-ore deposits of the Briey Longwy and Nancy basins. (*) These deposits have given rise to a highly important metallurgical industry, though the area suffers from the disadvantage of having no coal deposits, and thus is obliged to import fuel. The industry is in the hands of a number of important concerns, who operate mines, coking plants, blast furnaces and steel-works. In contrast with the importance of the iron and steel industry, engineering is only of minor significance.

The deposits of rock salt (**) in the Meurthe-et-Moselle have resulted in the establishment of a chemical industry of some significance, treating salt and salt derivatives. The important plant of Solvay et Cie at Dombasle accounts for about 50 percent of the total French production of soda ash. (475,000 tons annually).

Deposits of sand suitable for the manufacture of glass have made Nancy the center of the glass industry of some importance. (Baccarat) The industry has specialized rather in fancy glassware, although some optical glass is produced.

The department of Vosges has an industrial economy entirely different from that of the Meurthe-et-Moselle. It is one of the most important areas in France for the spinning and weaving of cotton and the manufacture of knit goods, underwear and ready made clothing.

The department of Vosges in addition has a paper and printing industry of primary importance, specializing in the production of high grade paper and art editions. The Vosges is also well forested (***) and has a woodworking industry.

(*) The quantities of iron-ore mined in this region represented nearly 50% of the French total production of iron-ore.

(**) The production of salt in this region, according to 1936 statistics, amounted to 70.6 percent (1,209,690 tons) of the total French salt production.

(***) Since August 1940, under a decree of the Vichy Government, all forests, whether State communal or privately owned, have been placed under strict control.

Agriculture:

The region is of secondary importance agriculturally, and is deficient in most of the essential foodstuffs. Under peace time conditions, only potatoes and milk were produced in excess of the region's requirements.

About 2.5% of the French potato crop is produced in the region and over half of it is harvested in the Vosges department, a number of small works producing "fecule" (potato flour) used in the production of size employed in the textile industry.

Nearly 8% of all the French cheese comes from the Nancy Region, and 60 percent of the regional total is produced in the Vosges department (Co-operative dairy farming is almost unknown in this region).

Hops are extensively grown for use in the brewing centers. In 1940 the Germans took over, and assumed responsibility for the collective cultivation of a number of farms in northeast France, in departments stretching from the Channel to Burgundy. (The Ostland organization, or, as it became known later, the Reichsland org.). Some 2.6 million hectares came under German supervision. In 1942-43 it was stated in the German press that some 170,000 hectares were actually managed by the Reichsland, that about 2.2 million hectares were only nominally under German supervision, and had, by implication, been returned to the peasants. Considerable areas which have been ploughed up under German supervision were uncultivated before the war. The head of the Reichsland organization was in Paris (under direction of the German Min. of Agr.), one of its four branch offices was in the city of Nancy.

Except for substantial surpluses of milk and potatoes, the Nancy region is a deficient area.

Wheat and rye were formerly obtained from the Dijon and Orleans regions. The meat deficit was probably met from the same sources, while sugar was obtained from the Laon region. Supplies of wine came from the south of France and were supplemented by North African imports. Surpluses of milk and potatoes were probably despatched to the industrial centers of Alsace.

Food Industries

Food processing industries as a whole are not important to the region, though there are some breweries of significance. Some flour mills are to be found, and there are small centers for the production of jam, biscuits, chocolate.

Grain Milling:

Most of the flour mills of the region are small, and are scattered throughout the area. The largest are in the Vosges department, and are concentrated in the northern part of the department.

out the three departments. One of the largest in France, however, that of the Grand Moulins Vilgrain, is located at Nancy, and has a capacity of 72,000 tons of flour per annum.

Breweries:

Each department has several breweries, though those of the Meurthe-et-Moselle department are of greatest importance. The largest brewery in the region is that of the Grandes Brasseries et Malteries de Champigneulles, which has an annual production of 400,000 hectoliters (88,000 gallons).

Alcohol Distilleries:

The region lies east of the important sugar beet belt, so that alcohol distilling is only of secondary importance. There is, however, a large beet alcohol distillery situated at Verdun, the Distillerie de la Meuse, and two smaller distilleries are to be found in Nancy.

Jam, Biscuits, Chocolate and Canning:

Bar-le-Duc is a small center for the manufacture of jam and the canning of fruit.

Chocolate is manufactured at Nancy and at Saint-Die, while biscuit factories are to be found in Nancy and Commercy (Meuse). Two firms in Nancy manufacture yeast.

Departments: Moselle
 Bas-Rhin
 Haut-Rhin

The department of Moselle is in the province of Lorraine. The departments of Bas-Rhin and Haut-Rhin are in the province of Alsace.

General:

Alsace-Lorraine may be divided into two distinct geographical areas. The southern and eastern part, including the department of Haut-Rhin and the greater part of the Bas-Rhin, is a section of the deep enclosed plain of the Rhine Valley, shut off by the steep edge of the Vosges massif, while the department of Moselle in the northwest is a part of the Lorraine plateau.

The two areas are distinct climatically, the Rhine department having less cloud cover and less rainfall than the bleak plateau-lands of the Moselle, and the former is more productive agriculturally. Moreover, the stiff cold soils of the wheatlands of Lorraine have little in common with the more workable, rich soils of the Alsatian plain.

Before the war the population of the region was estimated at approximately 1.9 millions. The proportion of men and women engaged in agriculture was low, averaging 10% for the 3 departments, against 35% for France (natural average). The industrial centers were Metz, Colmar, Mulhouse and Strasbourg.

In 1941 the population was estimated at 1.1 millions, but it is probable that this figure does not include the Germans, who since the annexation in 1941 were settled in this region. (It was reported that 2600 farms were taken over by Germans and given to German and Austrian peasants).

Industrialization:

Three wars, during the last 70 years, with their resultant territorial changes, have given to Alsace-Lorraine an unique economic development.

The steel industry of the Moselle, for example, was established by German enterprise and capital at the close of the last century. In 1870 the Mulhouse district (Haut-Rhin) had a flourishing textile industry, specializing in cotton spinning. The neighboring department of Vosges undertook the weaving and finishing. Alsace was separated from the Vosges by the German frontier of 1870. During the German rule 1870-1914 weaving and finishing centers were established in the Mulhouse district (Haut-Rhin), and conversely, the French developed spinning and dyeing centers in the Vosges.

In the years preceding the present war Alsace-Lorraine was an important industrial area, contributing in no small way to French economic production. The region has valuable raw material resources, in the form of extensive iron-ore deposits, coal mines which provide a part of the fuel needed for the regions' industry, the most important potash deposits in Europe, salt mines, and the only fully exploited mineral oil deposits of any significance in France.

Iron and Steel Industry:

There was a flourishing iron and steel industry concentrated in the Moselle department in nine main plants. Although these obtain all their iron-ore requirements locally, they are dependent to a large extent on imported fuel. There are some coal deposits in the area (*) which can only be used advantageously when mixed with a coal of a different quality, for example, with that from the Nord and Pas-de-Calais field.

Various branches of the engineering industry were carried on, but were secondary to the steel production, though the Strasbourg and Mulhouse areas were centers of some importance, specializing mainly in the production of factory equipment in particular textile machinery, and of machinery for flour mills (Ets. Anc. Schneider Jaquet et-Cie.), as well as flour sifting plant (Franck et Cie in Selestat).

The annexation of Alsace-Lorraine by the Germans in 1940 has brought considerable changes to its metallurgical industry. The iron and steel industry has been reorganized and the works placed under the direct administration of German firms, while production has been intensified. As far as engineering is concerned, little detailed information is available, though it is certain that such articles as textile machinery are no longer being manufactured, and reports indicated that work was being done on armaments and aircraft or aero-engine components.

The Textile Industry:

The textile industry of Alsace was of primary significance, the Mulhouse-Colmar district being particularly important. Almost all branches of the industry were represented, though the region specialized in the spinning, weaving, dyeing and finishing of cotton. The manufacture of underwear and ready made clothing was of secondary importance. The wool industry of Alsace was also of considerable significance, and the main spinning and weaving centers were Mulhouse and Saint-Marie-aux-Mines.

(*) In 1938 the Moselle coal field produced approximately 6.8 million tons, 14 percent of the French total, and was the second most important coal field in France.

Owing to lack of raw materials, the textile industry has been forced to operate at a greatly reduced rate since 1940, and many mills have closed down completely. It is reported that some of the idle mills have been equipped with fresh machinery and were being used for the production of armaments or components for the aircraft industry.

Paper Factories:

Although France had not by General European Standards, an important paper industry, the paper mills of Alsace were among some of the more important in France. Moreover, Strasbourg had one important pulp mill, and, as a university town, was a printing center of some significance.

Chemical Industry:

The heavy chemical industry of this region is dominated by the Alsatian sylvinitite deposits, which have a high potash content. In normal times almost 3 million tons of crude potash salts were produced annually.

The refining of these salts, which was carried out locally, was a very considerable industry, the average pre-war output of refined potash products being 1 and 1.5 million tons per year, of which 5 to 700,000 tons annually were exported from France.

The region also supports a small but compact fine chemical industry, which owes its origin to the location of several dyestuffs manufacturers near Mulhouse. To meet the requirements of these dye firms for chemical intermediates the production of sulphuric acid, nitric acid, and various solvents has grown up in the neighborhood.

Utilizing the local deposits of rock salt for the manufacture of soda ash and other salt derivatives, there are, in the department of Moselle, two plants owned by Solvay & Cie. The works at Sallarbe is the most important with a capacity of 145,000 tons of soda ash per annum, which represents 15% of the total French capacity. The annual capacity of the Chateau-Salins plant is 54,000 tons of soda ash. Caustic Soda, Sodium Bicarbonate, and crystal soda are produced at Ham. Another important producer of Alkalies is the Potasse et Produits Chimiques, S. A. with works at Thann (Haut-Rhin) producing Caustic Soda, Caustic Potash & Potassium bromide. An affiliated company is the only factory in France producing titanium dioxide, and has a capacity of 1500 tons per annum.

In the summer of 1941, the Alsatian mining industry was merged for interim trustee administration with the Elsassische Kaliwerke G.M.B.H., founded for this purpose by the Preussische Bergwerks and Hütten, A.G.

Potash Production:

The total production of the potash salts in France, amounting to over 2,000,000 tons in 1936, was derived from the department of Haut-Rhin. The deposits were discovered in 1900, but were only fully exploited after the return of Alsace in 1918. (The Mines Domaniales produced 66.5% of the total French production of potash.)

Mineral Oil:

The deposits of oil sand near Pechelbronn, in the department of Bas-Rhin, are the only known source of crude oil in France, with the exception of the Saint-Gaudens field, (in the Toulouse region - Haut-Garonne department), which has not, as yet, been exploited. Crude oil production in Pechelbronn before the war amounted to some 70,000 tons per annum, or approximately 1% of French oil requirements at that time, and 3600 men were employed in the field and refineries. Present production is estimated to be at about the same level.

Salt:

There are important salt-deposits in the northern part of the region. (Lorraine-Moselle). In 1936 there were ten salt concessions in exploitation in the department, producing 10% of the total French production, which amounted to 1,711,000 tons annually. The production in Alsace consisted of 38% of refined salt and 62% of salt in solution.

Glass Manufacture:

The manufacture of glass is of some importance in the region, notably in the department of Moselle. Most types of glass are produced, including optical and watch glasses, crystal, plate and window glass, engraved and decorated glass. Products manufactured include domestic and scientific glassware.

Brick, Tiles, etc.:

The manufacture of bricks tiles, fire bricks, ceramics, etc. is important in the region. Alsace is also one of the principal centers in France for the manufacture of clay pottery.

There is a well-developed woodworking industry in Alsace-Lorraine, though in normal times, in addition to utilizing local supplies, which came mainly from the forested slopes of the Vosges (department

of Haut-Rhin), the region imported timber from Scandinavia and Central Europe, as well as from America.

NOTE: The important leather industry was omitted for lack of data.

General:

Alsace-Lorraine was under direct German administration and full productive use of the territory was therefore comparatively easy to attain. Generally speaking, therefore, the mines, mineral oil refineries, and iron and steel firms have maintained a high rate of production and still employ a large labor force. The textile industry has, however, suffered heavily from lack of raw materials, and in some cases the mills have been adapted for use of the production of aircraft and aero-engine components and for armament manufacture. (Increase of the demand for specialist workers).

Agriculture:

Agriculture in the region was less important than industry, and Alsace-Lorraine was far from being self-sufficient in the matter of essential foodstuffs. Little wheat and sugar beet were grown, though the production of potatoes, oats, barley and hops was of great importance. Market gardening was carried on on a fairly large scale, and vines were cultivated in the Rhine Valley. Considerable quantities of tobacco were also grown.

Potatoes were the one crop in which there was a large surplus. The average balance available for export of over 300,000 tons was one of the largest in any region of France. Milk was adequate to supply needs with a small surplus. It was estimated in pre-war days that wheat and rye were lacking by over 150,000 tons, sugar by nearly 40,000, meat by nearly 20,000, and wine by over 100,000 tons.

Specific figures of current production are not available. The German agricultural policy since 1940 has been to intensify cultivation, and to encourage the attainment of as great a degree of self-sufficiency as possible. Machinery, seeds and fertilizers have been introduced into the region. It is known, that quantities produced, have with the aid of rationing, gone further in making Alsace self-sufficient than in the pre-war days.

Food Industries:

Food processing was of fair importance, Strasbourg (*) being the main center. The town had important flour mills, chocolate and biscuit

(*) Alsace-Lorraine as a whole is not highly important for food-processing with exception of Strasbourg.

factories, and specialized in such products as CHARCUTERIE, PATE-DE-FOIE-GRAS and SAUERKRAUT. The region has an important brewing industry, with its main concentrations in Strasbourg and Metz. No information is available as to the present state of the food processing industries. Strasbourg was, however, the main center of activity, and it is doubtful whether all the factories operating there have been re-established.

Grain Milling:

The region is very low in flour-milling capacity. Nevertheless Strasbourg is an important center, and the port has good facilities for the handling and storage of grain. There are two important flour mills, the Grands Moulins de Strasbourg (capacity 120,000 of flour per annum) and the Minoteries Alsaciennes (capacity 30,000 tons per annum).

Sugar Industry:

Only a small quantity of sugar beet, less than 0.75 percent of the French total, is grown in the region, and cultivation is confined to the Bas-Rhin.

There is only one important sugar factory and refinery, that of the S. A. des Sucreries et Raffineries d'Erstein, at Erstein (Bas-Rhin). Its production for the season 1938-39 amounted to 8,250 tons of sugar. The plant is reported to be in use at present.

Vegetable Oils:

The cultivation of oilseed and rape, which formerly was negligible save in the Rhine Valley, has been extended to over 3500 hectares, and in 1943 the sowings of linseed, hemp and poppy seed are said to have been introduced on a relatively large scale. Intensive efforts to make farmers self-sufficient in cattle feed by the cultivation of fodder crops, are reported not to have met with any rapid success.

The great distance from the sea made it possible for the French in pre-war times to develop in this region the treatment of imported raw materials such as oil seeds. There is no extensive oilseed crushing or vegetable oil refining in this inland region.

There is one small vegetable-oil mill in Strasbourg, the Huilerie de Strasbourg, treating linseed and colza oils, with an output of some 1500 tons per annum.

Wine Industry:

Wine output is not great, but the quality of the different vintages makes them popular. The chief vine growing centers are the Moselle

Valley, the region of Metz is renowned for its vineyards, the sunny hillsides of the Vosges, famous since antiquity, and the hills facing the Rhin plain, between Thann in the Haut-Rhin and Wasselonne in the Bas-Rhin.

The various soils, including gravel and limestone, prove excellent for grapes, although it must be stressed that the quality of the vines produced in the three regions varies greatly. Annual output is most uneven, and whereas it averaged, pre-war, 600,000 hectoliters a year, and has reached as high a figure as 1.3 million hectoliters, it has also fallen to less than 250,000 hectoliters.

The numerous vintages take their names primarily from the communes in which they are made. Some of the best known CEPAGES of the region in order of quality are: RIESLING, TRAMINER, SYLVANER, KLEVENER, MUSCAR, GENTIL and TOCKAY.

Breweries, etc.:

Barley production in the Lorraine plateau and the Rhine plain is important and supplies a considerable number of breweries in the locality.

Although not comparable to the Nord and Pas-de-Calais, Alsace-Lorraine has an extensive brewing industry, which, moreover, is largely dependent on locally grown barley and hops. There are breweries throughout the three departments though the most important breweries are situated in the suburbs of Strasbourg and several have an annual output of over 100,000 hectoliters. In Metz, three of the five breweries have an annual capacity of over 100,000 hectoliters.

Little detailed information is available as to the present operation of the breweries, but there are indications that they are probably working at a reduced level.

A specialized product of Alsace-Lorraine is KIRSCH, a type of liqueur distilled from cherries, which is made chiefly in Colmar.

Dairy Industry:

The "Montbeliard" and the "Tachete d'Est", the chief cattle breeds, are found in Lorraine and on the slopes of the Vosges in lower Alsace where the pastures are particularly rich.

The milk yield is generally good, being above the average for the country. MUNSTER cheese, which is widely exported, is made chiefly in the south of the Vosges. The Bas-Rhin is the most important butter making department and before the war production of both butter and cheese represented 2% of the French total.

Market Gardening and Canning:

Market gardening is widespread throughout the region, fruit production generally taking precedence over vegetable growing. Along the many river valleys market garden produce is formed with the consequent development of the canning industries, in addition to a thriving "export" trade in "primeurs."

In lower Alsace, white cabbages are grown, chiefly in Bas-Rhin, and manufactured into sauerkraut.

Horbourg asparagus, onions, peas, celery and fruit of all descriptions are among the produce that is sold locally, and also canned at such centers as Colmar, Selestat, Wissembourg and Strasbourg.

Fecularies:

Although this department of Vosges is the chief center in France for the production of the fecule (potato starch), used in the making of the "Size" employed in the textile industry, there are nevertheless in the Bas-Rhin and Haut-Rhin, where the textile industry is equally flourishing, a number of "fecularies." These are probably not operating at present, as the textile industry is at a very low ebb, and the potatoes will be in a greater demand as food.

Miscellaneous Food Factories:

Strasbourg has an extensive food-processing industry of a varied nature. In addition to the products already mentioned, there is a CHARCUTERIE industry, PATE-DE-FOIE-GRAS is prepared and noodles are manufactured. A certain amount of fruit and vegetable canning is carried on in Strasbourg and the surrounding district, other centers being Selestat, Illkirch, and Wissembourg. At Strasbourg there are also biscuit and chocolate factories.

In the Bas-Rhin, Colmar and Mulhouse are of importance for the production of CHARCUTERIE, and fruit and vegetables are also canned at these centers. There is a small manufacture of biscuits.

In the Moselle, the food industries are of less significance, though Metz is a center for canning and for the manufacture of jam.

Hops:

Alsace is historically one of the oldest and the most outstanding hop-growing areas in France. The impetus of growing this crop came originally

from Bohemia and Bavaria, and, as a result, a large industry has developed in Bas-Rhin, nearly 80 percent of France's output coming from that department alone. Approximately 1/10th of the pre-war production was used locally, and the balance was exported to Bavaria, Belgium and England. The great hop market of the region is at Haguenau.

Producer and Wholesale Food Prices

	RM. per 100 Kg. (*)	
	Autumn 1939	Autumn 1943
Wheat	19.60	21.80
Rye	17.90	20.10
Barley	16.40	16.40
Oats	17.60	19.60
Maize	20.00	28.00
Potatoes	6.10	6.40
Sugar Beet	3.25	3.40
Sugar	41.82	41.94
Cattle	87.00	94.60
Pigs	97.20	128.00
Beef	160.00	160.00
Pork	144.00	146.00
Milk	16.62	18.36
Butter	268.00	308.50
Eggs (100)	10.50	10.50
Cheese	169.37	193.50
Lard	183.04	183.04

Retail Food Prices

	RM. per 100 Kg. (*)	
	Autumn 1939	Autumn 1943
Bread	0.34	0.34
Flour	0.44	0.48
Beef	1.74	1.74
Pork	1.64	1.84
Lard	2.14	2.14
Milk	0.25	0.27
Butter	3.20	3.60
Eggs (each)	0.12	0.12
Margarine	1.96	1.96
Sugar	0.80	0.78
Potatoes	0.08	0.10
Beer	0.78	0.72

(*) In arriving at the 1939 figures above the exchange rate of 100 fr. = 6.2 R.M. has been used.

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Recapitulation:

Alsace-Lorraine, after its annexation by Germany, became subject to the same control as was in force throughout the Reich. For the farming industry this entailed the introduction of the German system of control of agricultural production, deliveries, rationing and prices. All agricultural producers and manufacturers of food products were obliged to belong to the Reich Food Estate (Reichsnahrstand), which in 1933, took over the executive powers of the German Ministry of Agriculture and Food.

In Alsace the food and price administration, newly created by the Germans, was attached to the existing organization in the district of Baden. The administration of Lorraine was incorporated in that of the Palatinate. Each administration, directed from District Food Offices in Strasbourg and Metz respectively, was, of course, responsible to the central Reich Food Estate in Berlin.

The Orleans Region

Departments: Eure-et-Loir
 Loiret
 Loir-et-Cher
 Cher

The department of Eure-et-Loir is in the Province of Orléanais. Its western part extends in the Province of Maine, its northwestern part is in the Province of Normandie.

The department of Loir-et-Cher is in the Province of Orléanais, but its northwestern part protrudes into the Province of Maine.

The department of Loiret is in the Province of Orléanais. Its northeastern part extends into the Province of Ile-de-France, its southeastern part protrudes into the Province of Berri.

The department of Cher is in the Province of Berri. Its eastern boundary extends into the Province of Nivernais, its southeastern part is in the Province of Bourbannais.

Industrialization:

Industry is of second importance, and is almost entirely confined to a few centers, of which Bourges, Orleans and Vierzon are the most important. The essentially agricultural nature of the area is borne out, moreover, by the considerable number of plants manufacturing agricultural machinery or chemical fertilizers. Since the war a number of works have been evacuated to the region, or have taken over existing establishments, but this small movement has not to any great extent changed the general characteristics of the industrial activity in the region. Vierzon is a center for the production of agricultural machinery and implements, and there are also two armament works of some importance in the town. Bourges has an important aircraft factory, which has, however, been considerably damaged by aerial bombardment. There is an important state armament works in the town and some engineering establishments only of secondary significance.

The most important aspect of the engineering industry in the region is the production of agricultural machinery, the chief center being the Vierzon district in the department of Cher. The Societe Francaise de Materiel Agricole at Vierzon is the most important firm undertaking the work. The chief products normally included threshing and pressing equipment for agricultural uses, tractors, steam engines, gas engines, gas producers and machinery for saw mills.

The heavy engineering firms in the region are located chiefly in the Bourges, Vierzon, and Orleans districts.

Agriculture:

Orleans is a characteristically agricultural region, which the river Loire divides into two plateau. To the South is the Sologne plateau, to the North, the Beauce and the Gatinais. Cutting through both, the wide fertile valley of the Loire.

The most important single feature, from the point of view of food production, is the Beauce plateau, or as it is frequently called "The granary of France." This riverless and treeless, but fertile, plain includes large areas of the departments of Eure-et-Loir and Loir-et-Cher, and also parts of Loiret. The Beauce is one of the most outstanding wheat and oats producing regions in the whole country and dominates the region agriculturally.

Some 50% of the total working population is engaged in agriculture, which means that nearly 300,000 out of the total population of 1.1 million were, before the war, working in some variety of farming. (Farms are small).

Cereals:

The vast plains of Beauce are amongst the richest cereal-growing regions in the country. Over 8% of France's wheat came from Orleans before the war, 40% of the gross crop, which exceeded 600,000 tons, being produced in Eure-et-Loire. Hard wheat, which is important for its use in making "pates alimentaires," is grown with some success in the Sologne. Wheat generally is grown throughout all departments. Only a small quantity of rye is produced, chiefly in the department of Loiret. Oats are grown in the Beauce, as well as on the better-drained area of the Sologne. (For barley see processing industries).

Potatoes:

Although formerly the gross potato crop was not large, representing 3% of the French total, it had a particular importance. The seed potatoes of Orleans have an international reputation, and from Loiret and Eure-et-Loir seed was supplied not only to the greater part of France, but also to foreign countries. Vierzon (Cher) was also a notable seed-growing center.

Livestock:

Although the areas under meadows and pasture in each department are small, they provide rich grazing grounds, and the livestock reared in the Orleans region is known to be of good quality. The general standard has been considerably raised by the improvement of local fodder crops and the careful selection of herds.

Some 5.5% of the total French stock of horses and mules are in this region. The most notable breed is the PERCHERON.

Some 500,000 cattle, mainly of Norman Stock, were formerly in this region, a third of that number being in the department of Cher alone.

The sheep of the Orleans region, numbering some 7% of France's stock, are reared primarily for their wool. The chief breeds are the Ile-de-France, the Berrichon-du-Cher, and the Solognot.

Pigs and goats are found in moderate numbers in each department. Egg production was large, the value of poultry was high, while geese were also most important.

Food Consumption:

The Orleans region was formerly self-sufficient in essential foodstuffs. There were substantial surpluses of wheat, potatoes, sugar and milk and a sufficiency of meat and wine. Only in fats was there a deficiency.

The region was well able to feed its own population and have a substantial balance which was sold to Paris and industrial towns further north.

It has been estimated that the wheat surplus may amount to over 200,000 tons, potatoes to 30,000 tons, sugar to some 20,000 tons and milk to some 10,000 tons, so that it cannot be doubted that in some capacity at least, the Orleans region contributes substantially to feeding the capital city.

All in all, it may be assumed that nutritionally the Orleans Region is in an advantageous position as compared with regions which are more characteristically urban than agricultural.

Food Industries:

This essentially agricultural area has a varied food-processing industry, which is carried on mainly in fairly small establishments.

Grain Milling:

As considerable quantities of wheat are grown, many flour mills are established in the region. Most of these are small, though there are about 100 with a capacity of over 5 m. tons daily (in grain).

The largest mills in the region are situated at Chartres, Coudray and Dreux (Eure-et-Loir), Blois and Saint-Aignan (Loir-et-Cher) and Orleans and Triques (Loiret).

Sugar Industry:

Sugar beet production is important. Eure-et-Loir and Loiret formerly produced 7% of France's gross crop, and of that total over 80% came from Loiret alone.

Two important sugar factories, the Sucrerie de Tourny et Usines Annexes S.A. and the S. A. Sucrerie de Pithiviers-le-Vieil, are located in Tourny (dept. Eure-et-Loir) and in Pithiviers (dept. of Loiret) respectively. In addition there are 16 beet alcohol distilleries of some significance in the region.

Fruit, Vegetables and Canning:

Fruits and vegetables are grown throughout the region. Orchards and nurseries are numerous along the river valleys, notably that of the Loire. The products of the Loir-et-Cher and the Loiret have an especially high quality by reason of the excellent soil in their departments. Peas, beans and tomatoes serve to feed the canning industries, located mainly in the Loir-et-Cher. A canning product of outstanding importance is the asparagus of Romorantin and Vendome. The mushrooms of Bourre are another delicacy.

Orleans is the biggest center of market gardening in the region, and in the suburbs are large seedgrowing and distributing depots. The city of Orleans is also an important center for the canning industry, undertaking fruit, vegetable, and meat canning. There are also a number of canning factories in the department of Loir-et-Cher. The canned mushrooms of Bourre in Loir-et-Cher as manufactured by the firm Gilliard et Mesure in Bourre, are a local specialty.

Vegetable Oil Extraction:

Colza is grown in the dept. of Loiret, and hemp and flax in the Cher and Eure-et-Loir departments. In line with the general agricultural policy followed by the French, the acreage under oilseeds has been probably extended in the region.

A small quantity of high-quality oil is extracted from the chestnuts grown in the south of the Berry and processed at Bourges and Vierzon (dept. of Cher).

Dairy Industry:

Milk yields were, on the average, satisfactory. Production was more than adequate for Orleans, and more than a quarter of the gross output was formerly exported to Paris.

Butter, which totalled approximately $2\frac{1}{2}\%$ of the French output, was made at many of the smaller farms and exported. Among the many cheese centers were Aix-Saint-Benoit (Loiret), Thenay, Vendome (Loir-et-Cher) and Saint Gervais, near Blois, whence came the delicious CREME-ST.-GERVAIS.

Wine Industry:

The wine output of the region is not exceptionally high, but the quality is good. The chief vine-growing regions are the sunny fertile slopes of the Loire in the Sancerre district (Cher), and the valleys of the Loire, the Eure and the Cisse. Other districts are Blesois and Vendomois.

The Cher is noted especially for its fine red wines, and the Sologne for its white vintages. In general the most celebrated wines are the "Vins Mousseux" of Orleans, and from the Loiret, in particular, come the wines of Saint-Jean-de-Braye, Saint-Ay and Beaugency. The chief marketing centers for the whole region are Orleans and Blois. Liqueurs are made at Saint-Amand.

Breweries:

Barley is grown in all departments, most widely in Eure-et-Loir. Many breweries are scattered through the region, utilizing much of the rich barley crop.

The Clermont-Ferrand Region

Departments: Allier
Puy-de-Dome
Cantal, Haute-Loire

Allier is in the province of Bourbonnais, Puy-de-Dome and Cantal in the province of Auvergne and Haute-Loire is partly in Auvergne, and partly in the province of Languedoc.

Industrialization:

The industry of the region is both specialized and localized. The rubber (*) production in particular is outstanding, as both the Michelin factory at Clermont-Ferrand (dept. of Puy-de-Dome) and the Dunlap factory at Montlucon (dept. of Allier) come within the area.

Metallurgy and engineering is of less significance, for, although the region has some coal mines, no iron ore or other mineral deposits are present. There are, nevertheless, steel works of regional significance at Commentry (dept. of Allier) and Montlucon (Allier), and particular mention should be made of the works of "Aubert et Duval" at Les Ancizes (Puy-de-Dome dept.), which produces specially hardened steel.

Clermont-Ferrand is an engineering center of some significance, and Thiers (Puy-de-Dome) is a leading French center for the manufacture of cutlery. L. Plane Co. in Clermont-Ferrand manufactures factory equipment and agricultural machinery, while Manry Freres in the same city specializes in the production of boilers and machinery for canning factories. Another firm, manufacturing agricultural machinery, is the "S. A. des Ets. Dorian-Roltzer, Jackson & Cie." in Pont-Salomon in the Haute-Loire dept. Many other small firms in the region manufacture agricultural machinery and equipment.

Agriculture:

The Clermont-Ferrand region, which geographically forms part of the Massif Central, is an area of plateau and mountains separated by broad fertile valleys. The region as a whole is predominantly agricultural, though, on account of the extensive upland areas, arable farming ranks second to pastoral farming.

* Before the war France was one of the most important producers of rubber goods in Europe and the sixth largest consumer of crude rubber in the world. Some 60,000 tons of crude rubber were imported annually, mainly from Indo-China and other French colonies.

Agriculture:

The Clermont-Ferrand region, which geographically forms part of the Massif Central, is an area of plateau and mountains separated by broad fertile valleys. The region as a whole is predominantly agricultural, though, on account of the extensive upland areas, arable farming ranks second to pastoral farming.

Nevertheless, considerable quantities of wheat and potatoes are grown, and the region can go far in supplying its essential food requirements. Over 50% of the working population of the region is engaged in agriculture. Agriculture is not of a high standard. Mechanization and fertilizer usage are limited. Nitrates and potash are used very little, and phosphates to an average extent only in the Allier and Cantal departments.

Although crop production is neither rich or varied, in pre-war days output of the chief foodstuffs was more than adequate for the region, and quantities of wheat and potatoes were exported to other parts of France.

Cereals-Wheat:

Wheat production amounted to less than 3% of the total national crop, and of the 240,000 tons harvested annually over half was gathered from the fertile lowlands of the Allier.

Rye:

Nearly 33% of the French rye crop was gathered from this region.

Barley and Oats:

Barley and oats crops amounting formerly to 75,000 tons and 137,000 tons respectively, represented 7% and 3% of the total French harvests.

Potatoes:

Potatoes are quantitatively the greatest crop of the region. In pre-war years the harvest amounted to over 900,000 tons and represented 8.5% of the country's gross output.

Livestock:

Livestock, both for slaughtering and breeding purposes, play an important part in the rural economy of the region. Cattle represents nearly 7.5% of the French total stock and numbers over 1,000,000 heads. This region, so rich in natural pasture, can be classed among France's biggest centers (dept. of Cantal).

Although detailed information regarding pre-war and current consumption is lacking, it is known that formerly the Clermont-Ferrand region was well supplied with essential foodstuffs, except sugar, of which there was a gross deficiency of 25,000 tons. It has been estimated that before the war the wheat and rye surplus amounted to about 70,000 tons and that of potatoes over 100,000 tons. Milk supplies were adequate, but the surplus was only small. In fact the region was slightly deficient. The small butter and pig fat surplus necessitated a larger import of vegetable oils. Meat was in good supply with an exportable balance of over 70,000 tons. Wine had to be imported, approximately 150,000 tons annually.

The current food position is difficult to gauge. Clermont-Ferrand is the only large city of the region and it appears, that the food position was better in the Clermont-Ferrand Region than in the more industrialized regions of France.

Food Industries:

The food processing, due to the general rather low standard of agriculture, is not developed, and only a small variety of food processing plants can be found in this region.

Grain Milling:

A large number of small flour mills is scattered throughout the four departments, though the greatest concentration is in the Allier Department. The one large mill in the region is that of Laporte at Blesle (Haute-Loire) with a daily capacity of over 100 tons of wheat. Only two other mills have a daily capacity of over 25 tons of wheat.

Wine Production:

Wine production, of limited quantity, and amounting to less than 70,000 tons annually, was concentrated almost entirely in the Allier and Puy-de-Dome Departments. The valley of the Sioule, which produced fair quality wines, was the chief center in the Allier Department, while the hillsides of the Limagne district were most prolific.

Fruit, Vegetables and Canning:

Although market garden produce is not abundant, the fruit of Allier and Puy-de-Dome especially have formed the basis of important fruit canning and preserved fruit industries. The apricots, cherries, strawberries and plums grown in the vicinity of Riom (Puy-de-Dome) and Clermont-Ferrand, the real center of the fruit of Auvergne, are famous.

Dairy Industry:

The number of cattle is high in the region (over 1,000,000), but dairy farming is not generally outstanding. Annual milk yield is everywhere poor, only in the Allier Department does it slightly exceed the low national average of 1700 liters. In the Puy-de-Dome the output fell to as low as 640 liters per cow before the war (annually). In spite of this, however, milk output of the region amounted in 1937, to over 750,000 tons, nearly 6% of the French total. The Allier and Puy-de-Dome Departments produced well over half that amount.

The Cantal Department is to be noted as an important cheese producing center. Cheese production pre-war output of 28,000 tons amounted to 13% of the French total, and of that quantity 60% was made in the Cantal Department. The chief brands were SAINT-NECTAIRE, CANTAL, BLEU D'AUVERGNE and ROQUEFORT, all exports of note.

Sugar Production:

The region had only a very small sugar production before the war amounting to less than 4000 tons. The gross deficiency of the region, in the amount of 25,000 tons annually (approximately) had to be imported from other parts of France.

Miscellaneous Food Industries:

A few breweries are to be found in the Allier, Haute-Loire and Puy-de-Dome Departments, but they are not large, as in this region wine is the beverage normally consumed.

Medicinal and aromatic herbs are grown and prepared in the Cantal and Haute-Loire Departments. Small biscuit and chocolate factories are scattered through the region and several small vegetable oil refineries are in the department of Allier.

The Rouen Region

Departments: Manche
Calvados
Seine-Inferieure
Orne
Eure

The province of Normandy was historically divided in two parts: La Haute Normandie including the Eure and Seine-Inferieure Departments, and La Basse Normandie including the Manche, Calvados and Orne Departments.

Industrialization:

There is a great industrial concentration in the Seine Estuary, comprising important ship-building, general engineering, mineral-oil refining and chemical industries. Rouen (Seine-Inferieure) is the center of an important cotton industry, and Elbeuf (Seine-Inferieure) has a significant place in the heavy woolen trade. There is a widespread small engineering industry in the department of the Eure. The rest of the region is not industrial, though there are certain important individual plants, such as that of the Soc. Matallurgique de Normandie (Schneider controlled), near Caen (Calvados).

There are no coal deposits in the region, but there are important iron-ore deposits in the departments of the Calvados and Orne. The ports of the region are conveniently situated for the import of coal from Great Britain (South Wales) so that in normal times industrial needs were easily supplied from this source. Thus, while there is no extensive iron and steel industry, there are two important plants, one at Caen and the other at Rouen, and a considerable and varied engineering industry has grown up.

Many of the smaller works specialize in the manufacture of agricultural machinery or in the production of household utensils. "Chevalliers Freres", with works in the department of the Eure at Verneuil-sur-Avre, Breteuil, and Francheville. The firm has foundries and constructional workshops, and undertakes general-engineering work of all kinds, one of its specialities being the production of worm conveyors for the transport of crushed and pulverized material. The "Foundries des Ardennes", a Mezieres firm, has a branch works at "Pont Audemer" (Eure department). It specializes in malleable castings, and manufactures spinning machinery and accessories, and components for tractors and other agricultural machinery.

There is a number of chemical factories in the region, concentrated mainly in the area of the Seine Estuary (sulphuric acid and super-phosphates).

Agriculture:

Normandy is renowned for its agriculture, particularly for being the oldest and richest dairy-farming region of France. La Haute Normandie or Upper Normandy, is a region of high farming, La Basse Normandie, or Lower Normandy, is predominantly grassland dairying country.

Normandy is able to use a high proportion of its area for agriculture, more than 70%, compared with 57% for France as a whole. The proportion under grass has been steadily increasing in recent years and in the three western departments, the Manche, Calvados, and Orne, two thirds to three quarters of the agricultural area is permanent grass. In the eastern departments, the Seine-Inferieure and Eure, by contrast, two thirds of the agricultural land is arable. The arable farming, however, is less advanced and mechanized than that of the more northern departments, in the Léon and Lille regions. The average size of farms is above the French average (average in France - 28 acres per farm). The conventional rotation of crops is wheat, oats, clover or lucern. The oats, and to a large extent the grasses, are grown as fodder for horses, which are a prominent feature of the farming in this area.

Fertilizer consumption is above the average for France. The artificial fertilizers have to be imported from other regions, but there are ample factories for dealing with the raw materials.

Cereals:

The average output of wheat for the region, 1936-38, was 460,350 m. tons, about 6% of the French total. Oats, for the same period, 363,800 m. tons, or 7.8% of the French total.

A little barley was grown in Lower Normandy, and a little buckwheat in the Bocage (in the South of the Manche Department), but hardly any rye.

Livestock:

Cattle represented nearly 10.6% of the French total stock and numbered 1,670,000 heads between 1936-38. During the war numbers of cattle in Normandy have increased somewhat, by 10% - 15%. It is almost certain, however, that the high average pre-war milk yield in Normandy (2700 liters or 600 gallons compared with the French average of 1700 liters or 375 gallons) has not been maintained. The famous Normandy breed of cattle has been specialized into a beef type and a dairy type. The breed is generally kept pure, but there are many herds of Norman crossed with Durham, the latter imported from Britain.

Horses represented 8.5% of the French total stock and numbered 233,500 heads between 1936-38. In the Manche and Orne Departments, where the farms are smaller, there is little machinery and the peasant cultivates with horsedrawn implements. Horse breeders have found during the war a

profitable outlet in the sale of horses to the German Armed Forces. According to the Nov. 1941 census the total horse numbers have declined between 5% and 10% in the four departments of the region, compared with the pre-war figures, but in the Calvados department had actually increased by 6%.

Sheep and pigs represented 3.7% and 5% of the French pre-war stock (361,280 sheep and 351,977 pigs). It is estimated that sheep numbers during the war have declined by 23% - 39%, and pigs have been reduced more drastically, as much as 40% in the worst affected and most important pig-keeping department, the Manche.

Recapitulation:

Considered as a whole, Normandy is in peacetime a region of surpluses, contributing substantially to the supply of Paris and having certain food exports to other countries. There were large surpluses of butter, cheese and cider and smaller surpluses of liquid milk, meat and wheat. The only important deficiency was in sugar. The high Norman standard of living reflected itself in a high consumption of dairy produce, fruit and vegetables substantially above the French national average.

It is perhaps, significant that no complaints or urban food shortages have come from Normandy during the present war.

Grain Milling:

Small country mills are scattered through all the departments and most of the market towns of Normandy. The number of flour mills in the department of Calvados, Manche and Orne, with a capacity of wheat over 5 tons per 24 hours, was estimated before the war at 81. Two flour mills in Le Havre (Seine-Inferieure) had a capacity of wheat of over 100 tons per 24 hours.

Dairy Industry:

Chief among Normandy's food industries is the manufacture of butter and cheese. A comparatively small proportion of output is sold on the liquid market, except in the Eure and Seine-Inferieure departments, which serve the cities of Le Havre and Rouen. By far the greater part goes to the butter and cheese factories. In the Manche Department nearly 4/5 of the total milk output goes to the manufacturers, in this case almost all to butter.

Norman butter has a reputation for high quality, standing second only to Charente on the Paris market. Before World War I, there was a regular export of butter from Cherbourg and Le Havre to England, but after 1918 the trade was never recaptured.

Normandy is perhaps most famous for its cheeses, which include LIVAROT-PONT-LEVEQUE, PORT SALUT - DEMI-SEL, - PETIT SUISSE, - BONDON-GOURNAY, - MIGNOT, - and, above all, CAMEMBERT.

Camembert, which now has an international reputation, is said to have been first made by the widow Harel (Harel) in 1791 in the village of Camembert, near Vimoutiers. Its high quality is preserved by the vigilance of the Association of Camembert Cheese makers, and before the present war a significant export to Britain was being developed.

In the region of Normandy, there were in 1938 altogether 83 butter and 109 cheese factories, excluding the many farms which made butter and cheese on their own premises.

Manufacture of Cider:

The other leading industry of the region is the manufacture of cider. In recent years, however, the Brittany cider industry has grown in importance and Normandy's share is now less than one quarter of the French total. Nearly every farm has a few cider apple trees and a simple cider press. The crop fluctuates enormously from year to year, the French total output of cider apples being sometimes as low as 250,000 tons and sometimes as high as 6,000,000 tons.

There were in 1938 two hundred and twenty factories in Normandy, besides presses on every farm.

Highest grade cider, known as pure juice, has an alcohol content of 7° to 9°, but is rarely purchasable.

The ordinary commercial product consists of pure juice with a large admixture derived from the re-pressing of apples residues to which water and sugar have been added. The alcohol content of this drink averages only 4-6°. There is a small manufacture of champagne cider-apple juice bottled before the fermentation process has been fully completed. Finally, there developed before the war the manufacture and export of cider apple pulp, which the purchases could reconstitute into cider simply by adding water.

Alcohol Distilleries:

A subsidiary food industry is the production of alcohol, which in pre-war times was utilizing about one fifth of the apple crop. There was also the manufacture of the world famous liqueur, Calvados, which consists exclusively of distilled apple juice and which may be matured for as long as 50 years. The world famed "BENEDICTINE" was distilled at Fecamp. There are some distilleries around Rouen making alcohol from grain, chiefly from imported rice, maize and barley.

Sugar Industry:

Sugar beet is grown only in the Seine-Inferieure, the Eure and a little in Calvados. There are some sugar factories to deal with the beet, but not enough sugar was produced for local consumption and substantial quantities had been imported from other parts of France before the war.

Fishing Industry:

Fishing has never been of great importance in this region. All the Normandy ports between them contributed only 15% of France's total catch. The chief fishing ports are Fecamp and Dieppe. Fecamp has a Newfoundland fishing fleet, but most of the rest of the fishing is done in the North Sea, the catch being chiefly herring and mackerel. Near the coast, particularly of the Manche, shell fish are abundant, and there is an export to Paris of lobsters, crabs, cockles and mussels. Dieppe and Courseulles have oyster beds. Since the German occupation, Normandy's fishing business is believed to have virtually closed down. A few small fish canneries are located in the vicinity of Rouen.

Fruits, Market Gardening and Canning:

Fruit is grown in the Seine valley and the Pays d'Auge, there being a substantial export to England of cherries, plums and gooseberries, chiefly from the port of Honfleur.

Market gardening has been developed to supply the Paris market and for the export to England of onions, leeks and early lettuces. The watercress beds of Venles, near Rouen, have a high reputation.

There are only minor canning establishments in the region, of small significance, in comparison with other regions of France.

The Rennes Region

Departments: Finistere
Cotes-du-Nord
Ille-et-Vilaine
Morbihan

The province of Bretagne includes, besides the above named four departments, the department of Loire-Inferieure, in the Angers region.

Industrialization:

There is little industrial activity in the region. There were important naval arsenals at Brest and Lorient, but Brest is at present only partially active and Lorient has suffered severe damage from aerial bombardment.

There is no concentration of metallurgical industry, though the plant of the Soc. Metallurgique d' Hennebont et des Dunes at Hennebont (Morbihan) is of more than local significance, and there is a minor metallurgical center at Saint Brieuc (Cotes-du-Nord). The Societe Metallurgique d' Hennebont is an important concern controlled by the Cie. des Cirages Francais. Production included sheet metal of various kinds, steel ingots and blooms, and tinplate for the canning industry. About 2000 men were employed in the pre-war period. Since the Armistice activity at these works is believed to have been at a low ebb owing to shortage of raw materials and fuel, and it is reported that work has ceased completely since the spring of 1943.

The canning of foodstuffs, and more especially of fish, is important in the region, and a number of firms specialize in the manufacture of cans. Among these mention should be made of the Concarneau branch of the Nantes firm of the Ets. J. J. Carnaud et Forges de Basse Indre, which employs some 300 workers in the season, and produces 150,000 cans daily. Another firm is the Boites Metallurgiques d'Arvor, at Quimper, which normally employs 160 workers, but which is believed to be at present inactive.

As is natural in a predominantly agricultural region a number of superphosphate and mixed fertilizer factories is to be found.

One important aspect of the chemical industry in the region is its iodine factories. The iodine industry is based on the Kelp (seaweed) which is peculiar to the "Ria" Structure of the western coast of Brittany, and which is found in no other part of France. It was stated that, at the time of the Armistice, France had a stock of 35 tons of iodine which was surrendered to the Germans, and it was reported that four tons a month were to be ceded to Germany.

The region is also noted for the production of Kaolin. The total for the region in 1936 was 75,300 tons and the total quantity of Kaolin produced in France during the same year was 124,900 tons.

Agriculture:

Although Brittany is popularly thought of as a fisherman's country, in fact, quite a small proportion of the population lives by fishing, while more than half is engaged in agriculture.

The peasants of Brittany have always had a high birthrate and a high infant mortality rate. The countryside is grossly overcrowded. There are too many families in the available agricultural land, and this constitutes the principal source of Breton poverty and backwardness. Surplus labor seeks employment elsewhere, especially seasonally, in Jersey for the potato lifting, in the Brie and Beauce country for the grain harvest. The real Breton reckons that Brittany ends at a line drawn roughly from Chatelandren to Muzillac, east of which lies the "pays gallot", France, where French, a foreign language is spoken (not Breton).

Farms in Brittany are small, partly because of the pressure of over population, partly, in the coastal areas, because of the high value of the soil, and partly because so many fishermen run a farm as a part time occupation. In Brittany the landlord-tenant system is far more widespread than in most other parts of France.

Two distinct types of agriculture are found in the region. First, the mixed farming of the interior, which relies on grain growing, horse breeding and butter making.

Secondly, there are the market gardening regions in the sheltered river estuaries, where intensive cultivation of early vegetables is carried on, partly for the Paris market, and partly, in normal times for export. The mild winters and early coming of spring gives the growers the priceless advantage of being a few weeks earlier than market gardeners elsewhere.

The standards of farming efficiency and the standard of living of the Breton population (on farms) are backward by comparison with the rest of France. Although the peninsula is so bleak, wet and wind swept, the proportion of land in agricultural use is higher than in France as a whole.

Cereals:

Wheat is the principal crop, occupying about a quarter of the ploughed land. The average production for the region between 1936-38 was 503,000 tons or 6% of the French total crop. Oats came second, barley third, while rye is unimportant except in the Morbihan Department.

Potatoes:

Potatoes are of great significance in the region. Not only is there a concentration of early potatoes in the more sheltered districts, but everywhere there is a large surplus (well over 500,000 tons in all) of main-crop varieties which is transported to Paris and other towns. Moreover, Brittany, partly because of its climate, is able to grow disease-free strains and hence has an important trade in supplying seed potatoes to other parts of France.

Fodder Crops:

A considerable area is devoted to fodder crops, mangels, cabbage, fodder carrots, clover and lucerne. Indeed, these make a livestock industry possible for a people which cannot afford to buy feeding stuffs. The normal crop rotation is wheat, potatoes, oats, or wheat, mangels, oats. Many variations are found and often when lucerne or clover is sown it is left "down" for two or three years.

Livestock:

Brittany is above all a horse-breeding country. The Breton breed is a small, light, but powerful horse prized in former days for the post and for stage coaches, but now employed for light delivery vans. It is not suited for heavy agricultural work. Horse breeding is important throughout the region, but particularly in the Finistere where the horse fairs at Le Faou, Chateaulin, Quimper, Carhaix and elsewhere attracts buyers from all over France. Each of the Breton departments has a greater horse population for its area than any other department in the country. The regional total of horses, donkeys and mules numbered 331,000 between 1936-38, constituting 11% of the French total for the country.

Pig breeding is of some importance, especially in the Cotes-du-Nord, and the Finistere departments. The pigs are fed on skimmed milk, the by-product of butter making, and on undersized potatoes. There is, however, no organized bacon-curing industry. Either the pork is eaten locally, or the hams cured on the farms, are sold to the towns.

Sheep are much less numerous than in most other regions of France.

General:

Brittany considered as a whole, is a surplus food-producing area. It produces substantially more than it consumes of wheat, potatoes, meat, butter and cider. Two important deficiencies are sugar and edible oil, of which Brittany imports all its requirements. Even under war conditions, there is still some exportable surplus of foodstuffs. It is significant that no reports of food shortages have come out of Brittany during the war.

Food Industries:

Although there are small pockets of extremely fertile soil and genial climate, the bulk of the country is rough mountain and moorland unsuitable to food production. The food processing industries are undeveloped and only a small variety of food processing plants can be found in the region. The only important food industry of the region is fish canning.

Flour Milling:

Flour milling, though serving only local needs, should be mentioned because it is carried on in a surprisingly large number of small mills. The four departments had in 1938 as many as 1600 mills, and the Finistere, with 660, had more than any other department in France.

Fishing and Canning:

The fishing industry is, in normal times, of importance both to Brittany and to France. At the many ports of the peninsula 30 percent of the total French catch is landed to an average annual value of over 300 million fr. (pre-war). Three distinct types of fishing may be distinguished. First, the deep-sea fishing off the north coast, centered on Paimpol, whence, before the war, the Iceland fleet sailed every spring to the Iceland and Greenland banks. Off the south coast, centered on the Ile-de-Groix, whence the tunny fleet sailed down the Bay-de-Biscay to fish tunny below Bordeaux. Of these the former had already, before the war, fallen on difficult times through the severe competition of the English, German and Americans with their more modern vessels. Since the war it is unlikely that either have been able to operate at all.

The second is the sardine fishery of the south coast where, fairly close in shore, big shoals of sardines are found between May and November. These fishermen are exclusively concerned with the sardine trade. They refuse to go after other fish - even for the plentiful early spring mackerel - nor, in contrast to the other fishermen, do they run farms by way of spare time occupation. When there are no sardines they fold their arms and sit in cafe's grumbling. When there is a glut they grumble at the low prices.

The third fishery is concerned with shell fish, lobsters, crabs, oysters, mussels and a dozen other kinds. Oyster beds, both natural and cultivated, are found all round the Breton coast, the chief cultivated beds being in the large fjords of the Finistere and the Morbihan. In the Morbihan, young oyster stock is brought from the rivers Auvray and Trinite and set out in beds in the gulf of Morbihan for fattening. Mussels are "cultivated" in similar fashion in the Vilaine estuary, but the mussels which occur naturally along the north coast are in the main consumed locally, being

of too poor quality to be worth sending to Paris.

The fisheries had, in 1937, some 8,300 boats and employed over 36,000 men directly, besides those engaged in boat building, net making and other related trades. They provide the raw material for the only important food industry of the region, Fish Canning. The chief enterprise is sardine canning, but tunny, cod fillets, crab and herring are also of growing importance. The canneries are not in the main large undertakings. Small business is found in nearly every fishing port along the coast, each canner having his own special recipes and claiming to turn out a highly individual product.

Since the war inshore fishing for sardines and tunny has continued on a somewhat reduced scale. Many of the canneries still operate, tomato preserve and salt taking the place of olive oil.

The Dairy Industry:

Annual yields of milk are low, ranging from 1100 to 1500 liters in the four departments. The southwest - the district known as "Cornouailles" - is the home of a black and white breed of milk cow distinct from the black and white Frisian in that its milk has a high milk content. This breed is important because nearly two thirds of Brittany's milk output is used for butter making (against only 35% in France as a whole). The butter is mostly made on farms. Like Welsh butter, it is prized by those who are accustomed to it, but it fetches a low price on the Paris market. The establishment of cooperative dairies, which might improve the quality of the butter, has never succeeded in Brittany as it did further south in the Charente.

Cider Industry:

Brittany has an important cider industry. During the last two decades, it has surpassed Normandy as the chief cider-growing region of France. In 1936-38 it accounted for 33 percent of the total French output, the chief producing departments being the Ille-de-Vilaine and the Morbihan, and the best quality make being "Fouesnant." Almost every farm has its cider press, while the Finistere has 15, the Ille-de-Vilaine 31, the Morbihan 33 and the Cotes-du-Nord 51 commercial cider making establishments. The highest grade cider, known as "pure juice", has an alcohol content of 7 to 9 percent, but it is rarely on sale. The ordinary commercial product consists of some pure juice together with a large mixture derived from the repressing of the apples residues to which water and sugar have been added.

Market Gardening and Canning:

Market gardening, though occupying a small acreage, provides an important part of Brittany's farm income. The most famous district is that around Roscoff and Saint-Pol-de-Leon where, besides the well known Roscoff cauliflowers, artichokes and onions are also among the principal crops. Early potatoes, almost a market garden product, are cultivated on the Lizardrieux and Pont-l'Abbe' peninsulas. Strawberries are important in the Plougastel-Daoulas district. The market gardening industry suffered acutely, and reduced its acreage substantially, during the economic depression of the early 1930's, partly on account of low prices and partly because the introduction of import duties by Britain closed the Breton's principal export market. A number of small canning establishments, especially in the department of Finistere, specializes in the canning of various vegetables.

The Angers Region

Departments: Loire-Inferieure
Mayenne
Sarthe
Maine-et-Loire
Indre-et-Loire

The Mayenne and Sarthe departments are in the province of Maine, with exception of their southernmost parts. Their southern parts and the department of Maine-et-Loire are in the province of Anjou. The southwestern part of the department of Maine-et-Loire is in the province of Touraine. The department of Indre-et-Loire is in the province of Touraine. The department of the Loire-Inferieure is in the province of Bretagne.

Industrialization:

Although the region is primarily agricultural, there are nevertheless some industrial centers of more than local significance. Chief among these is the important industrial concentration of the Loire-Estuary (department of Loire-Inferieure), with the shipbuilding and aircraft industries of Nantes and Saint-Nazaire. The Penhoet shipyard in St. Nazaire, is famous for having built, among other liners, the Normandie (severe damage of the St. Nazaire was sustained by aerial bombardment in 1943).

The metallurgical industry of the region is concentrated mainly in the area of the Loire Estuary. There are subsidiary centers of La Mans and Tours. The region has certain deposits of iron ore, but all the necessary coal was imported through Nantes from Great Britain, Poland and Germany.

At La Basse-Indre, to the west of Nantes, the Ets. J. J. Carnaud et Forges de Basse-Indre had a plant equipped for the production of open hearth and electric steel and various finished and semi-finished products. In this works the annual capacity for steel is stated to be 100,000 tons. Its main production was steel castings, steel alloys, sheet metal, and TINPLATE for the sardine canning industry. It is stated that in spring and summer just under a million cans a day were made by this works, and in winter 200,000 cans. The present state of the activities of this plant is not known, but it must be assumed that it is suffering from shortage of raw materials.

A considerable amount of general engineering was carried on in the region, the main centers being Nantes, Le Mans, and Tours, though small engineering works, particularly those specializing in the manufacture of AGRICULTURAL MACHINERY and instruments, are to be found throughout the region.

Donges in the Loire-Inferieure is an important oil port, situated on the North bank of the Loire to the east of Saint-Nazaire. There are two mineral oil refineries here, that of the PECHELBRONN-OUEST, and a smaller one, that of the Consommateurs de Petrole, which is situated alongside it. At these refineries the East Texas type of crude oil is normally processed, though, owing to the absence of crude petroleum, they are not in operation now.

There is an important leather industry in the region, and tanneries and shoe factories are to be found in each of the five departments.

These are two Kuhlmann factories in the Nantes district at Chantenay and at Paimboeuf. The Chantenay plant employed about 200 workers before the war, and manufactured sulphuric acid, superphosphates, fertilizers, animal black, and glue.

There is a small textile industry in the Angers region. At Angers, the Etablissements Bessonneau has two factories specializing in the manufacture of jute and hemp. The firm manufactures sail cloth and tarpaulin, jute sacks, waterproof canvas, rope and sacking of all types. It is, in fact, the "Saint Freres" of Western France. One significant fact about the textile industry of the region as a whole is its specialization in hemp and flax. Small quantities of these are grown locally, so that the industry will not be entirely without raw materials.

Agriculture:

The Angers Region is predominantly agricultural. It is a transition zone between the north of France, where agriculture is intensive and the crop yields are high, and southern France, where there is less arable land and crop yields are low. It is a region of mixed farming, with arable land, market gardens, cattle meadows, and with vineyards on the south-facing slopes.

The farms of the Angers region are mostly between 10 and 50 hectares (25-125 acres) in size, the number of larger farms being well below the French average. The absence of large farms means that the agriculture of the region is not mechanized. Almost all the fertilizers have to be imported from outside the region. The labor force consists overwhelmingly of permanent labor as might be expected in such a region of mixed farming.

Cereals:

The region contains 8% of France's arable land, but only 6% of it is grass. It is a region in which by far the greater part of the land is under the plough and this applies particularly to the Maine-et-Loire,

Indre-et-Loire and Loire-Inferieure. About a quarter of the ploughed land is under wheat in each of the five departments. Yields are above the French average in the Mayenne and Sarthe departments, but below in the rest of the region. About 8% of the total French wheat crop (607,000 m. tons) was produced between 1936-38 in the Angers region.

Rye is grown on an insignificant scale and barley is only important in the Mayenne and part of the Sarthe.

Oats are grown everywhere, but particularly in the Indre-et-Loire. Except in this department, where there is a surplus, the oats crop just covers the needs of the local horses and cattle. The best yields of oats are obtained in the Sarthe. The cultivation of other cereals is of importance only in the Loire Inferieure, where a large acreage of buck-wheat is found.

Potatoes:

There is a considerable cultivation of potatoes throughout the region, though the yields, except in the Mayenne, compare unfavorably with the French average. From the lower reaches of the Loire there is an important export of early potatoes to the Paris market.

Livestock:

The region has a substantial number of horses and cattle, a moderate number of pigs and very few sheep. There were 298,000 horses in the region, constituting 10% of the French total stock of horses between 1936-1938.

The number of cattle in the region was 1,422,000 heads, about 9% of the French total stock between 1936-1938.

The region is the home of the important French breed of cattle known as the Maine-Anjou, which is widely found throughout Western France. The Maine-Anjou, although originally the result of a cross between the English Durham and the local Angevin breed, has been bred more in France for milk than for beef production.

Recent reports suggest that the war time changes in livestock, especially in regard to cattle and horses, were insignificant. It should be noted, however, that the foot and mouth disease (always present in France to some measure) and the tuberculosis (as a result of inadequate housing) were always in this region somewhat above the French average.

General:

The region had in normal times a large surplus of almost all foodstuffs. The annual wheat surplus varied from 100,000 m. tons to 200,000 m. tons,

and the potato surplus from 400,000 to 500,000 m. tons. There was a small surplus of wine and a considerable one of cider. The region exported some 40,000 tons of meat, large quantities of butter and also apples, pears and a variety of vegetables. The region also accounts for half the eating-apple output of France, (mainly Sarthe), a fifth of the French pear production one quarter of the French output of strawberries and mushrooms. It is unlikely that any significant fraction of the population in this region has suffered undernourishment through being confined to the official rations.

Food Industries:

Considered as a whole, the region is transitional between the high farming standards of northern France and the more primitive standards of the south. The food industries of the region, in the main, reflect the character of the local agricultural production.

Grain Milling:

In 1938 there were 1012 flour mills in the region, most of them of small capacity, scattered throughout the area. Of the two mills in the region, producing over 24,000 tons of flour a year, the first one was in Nantes (Loire-Inferieure), the "Loraison Freres, Grands Moulins de la Loire," the second one in Saint-Georges, near Le Mans (Sarthe, the Moulins St. Georges.)

Wine Industry:

Vines are of importance in the three Loire valley departments, the Indre-et-Loire, Maine-et-Loire, and the Loire-Inferieure. The area of vineyards, however, has slightly decreased in this region during the years preceding the war. Wine making plants are found all down the Loire valley, almost all of them of small capacity. There is an important export of the Loire wines of high quality, the Vouvray name being best known.

Cider Industry:

In the two northern departments, the Mayenne and Sarthe, cider orchards replaced the vineyards more than half a century ago, and now the districts produce between 15% and 20% of the total French cider output. There were altogether 58 cider factories, most of them located in the Sarthe, Mayenne and Loire-Inferieure. Nearly every farm in the cider districts has its own press, and makes sufficient cider for its own consumption. There were also more than 60 distilleries, most of them using apples as their raw material. In the Sarthe and Mayenne, several of them produce Calvados and other fruit based liqueurs.

Vegetable Oil Industry:

Before the war there was some colza cultivation in the Mayenne and in the Maine-et-Loire Departments, and this has probably increased substantially as the result of the recent expansion in the oil seeds acreage.

The best known oil mill producing oil from linseed and colza is located in the Maine-et-Loire Department in the city of Angers and in Villevoque-sur-Loire, operating under the name Brunet & Castex.

Three firms manufacturing nut oil can be found in the Indre-et-Loire Department, two of them in the city of Tours, and one in Vouvray.

Dairy Industry:

The milk yield for the region is substantially above the French average, and most of the peasants earn a large part of their income from their dairy cattle.

Owing to the absence of large industrial centers comparatively little milk is sold for liquid consumption ($11\frac{1}{2}\%$ of the output compared with 19.6% in all France), and a large amount is used for butter, most of which is made on the farm. The organization of co-operative dairies has not spread northwards from the Charente Department, where it is such a special feature.

Since the region normally had a surplus of meat and dairy produce, it is likely to be comparatively well supplied now, the peasants retaining, in defiance of all regulations, as much as they need for a comparatively liberal diet.

Market Gardening and Canning:

A wide range of market garden crops is grown in the region. Haricot beans and dwarf beans are cultivated throughout the Loire valley. The annual output of haricot beans before the war was approximately 6000 tons, and of French beans some 7000 tons.

The latter output is very important and the production of French beans in this area is only superseded by the Paris and Marseilles Regions.

The Maine-et-Loire has a large export of cauliflowers and globe artichokes, being second only to Brittany in both these crops. In this department, and in the Loire-Inferieure, carrots and onions are widely grown.

There are various canning plants throughout the four departments of the

region (with exception of the Mayenne department) for the canning of fruits and vegetables and other food products. The department of the Loire-Inferieure has probably the greatest number of them. Sardines are being canned on a large scale in the Loire-Inferieure and in the Sarthe department. Nantes has a wide range of food factories, some occupied with canning of local produce, such as fruits and vegetables, and with fish conserves, and some (the three rice mills for example) using imported raw materials.

Fishing:

Fishing is not of much importance in this region, the only fishing ports being Saint-Nazaire, and to a much lesser extent, Nantes. In 1937 there were altogether 664 fishing boats registered at these two ports, and 1766 persons, whose principal occupation was fishing. The total catch was just under 3 percent by value of the French output.

The Limoges Region

Departments: Indre
Creuse
Haute-Vienne
Correze
Dordogne

The department of Indre is in the province of Berry, its south-western part is in the province of Marche. The northern part of the department of Haute-Vienne is in the province of Marche and its southern part in the provinces of Limousin and Saintonge. The Dordogne department is in the province of Marche. The Correze department is in the province of Limousin.

Industrialization:

In this non-industrial region with a scattered population the workers are employed mainly in small enterprises. In the pre-war period some 17000 workers were employed in the metallurgical and engineering industries. The greatest concentrations were in Dordogne and the Haute-Vienne, but throughout the region the establishments were small, by far the greatest proportion employing 5 or less workers.

The production of chemicals is not on a large scale in the region. Being primarily an agricultural area, most of the chemical concerns manufacture fertilizers, while the presence of oak and chestnut in the wooded areas accounts for the production of tanning extracts.

The Limousin is one of the chief paper producing areas in France, specializing in the production of strawpapers. The region is characterized by the large number of small mills, few of which have modern equipment.

The leather industry is of outstanding importance in the Haute-Vienne, where tanning is carried on on a fairly large scale, and where there are important boot and shoe factories, chiefly in Limoges, and glove factories, mainly in Saint-Junien.

There was a small-scale textile industry, which employed some 6000 workers, centered in the departments of Creuse, Indre and Haute-Vienne. The Limoges region has a considerable woolen industry and the larger spinning mills are in the city of Limoges. The weaving of wool centered mainly in the towns of Treignac (Correze) and Aubusson (Creuse) producing special varieties of cloth. Since the 18th century the towns of Aubusson and Felletin (Creuse) have been well known for the manufacture of handwoven carpets and tapestries, which have had before the war a large market in America, England and other European countries. The manufacturing of clothing and accessories formerly employed some 20,000 workers, but this industry was carried on in the main by small groups of workers, or even by single artisans.

There was an important ceramic industry in the Limoges region and its most important aspect was the manufacture of porcelain. The department of Haute-Vienne alone had in 1926 - 131 establishments engaged in the manufacture of porcelain, 22 of which employed more than 100 workers.

There is a wide variety of wood working industries, as in most regions of France, scattered throughout the five departments.

Agriculture:

The Limoges region, situated partly on the slopes of the Massif Central, and partly in the plain of Aquitaine, is in no way outstanding, either physically or agriculturally. It contains stretches of good arable land and rich meadows and pastures. The latter lie chiefly on the mountain slopes and plateau of the eastern part of the region. The principal crops grown are wheat and potatoes, both of which were formerly exported from the region. Rye and tobacco were also cultivated, and mules, sheep and pigs figure most prominently among the livestock.

The average percentage of the working population in the region engaged in agriculture was 60%, rising as high as 72% in the department of Creuse, as against the national average of 35.7%.

The percentage of holdings, of less than one hectare is lower than in France as a whole (26%), except in the department of Indre. In the Corrèze it is as low as 3%. This may be explained by the preponderence of sheep farming, necessitating larger holdings. Limoges, owing to historical development and to custom, is a region with one of the highest proportions of "metayage" (*) tenure in the whole of France.

The general standard of agriculture does not appear to be high. Mechanization is limited, as is large scale farming. Pre-war yields were nowhere exceptional, and the departments rarely attained even the low French average for any crop.

Cereals:

The pre-war wheat harvest totalled some 360,000 tons per annum, and this crop was the most important in the region as regards quantity, accounting for some 4-1/2% of the national crop.

The rye harvest, however, although totalling only 116,000 tons, represented a far greater proportion of the total French rye crop, accounting for over 15% of the French total.

(*) The "metayage" system, by which the farmer pays for the rent of land in kind, the owner furnishing the necessary stock and seed.

The barley crop is negligible, except in the department of Indre. Of the pre-war regional maize harvest of 23,000 tons, 22,000 tons originated in the department of Dordogne.

Oats, although representing only 3.5% of France's gross output, normally totalled over 160,000 tons per annum.

Potatoes:

Potatoes are the one crop produced in substantial quantities. The annual harvest was normally 1.6 million tons, representing 10% of the French national output. Nearly 25% of the regional total came from the department of Dordogne.

Tobacco:

Nearly a quarter of the entire French tobacco crop was cultivated in the Limoges region and 7000 tons out of the regional crop of 7700 tons was harvested in Dordogne.

Livestock:

The livestock population of Limoges is numerous, and the quality high, as would be expected in a region of good pasture lands. The best grazing lands are found in the Champagne district of the Indre department, in the northern and eastern part of the Correze on the Millevaches plateau and in the Dordogne department.

The Massif Central is well known for the breeding of mules, which are reared especially in the more hilly departments. Horses, of Anglo-Arab and Arab blood, are bred primarily for export, in the Correze, Haute-Vienne and Creuse. The Berrichon horse, reared in the Indre, is used mainly for draught purposes. Mules, too, are widely employed in agriculture. Horses from the Haute-Vienne are largely used for "remount" purposes.

In pre-war days there were over a million head of cattle in this region, some 7% of the French total stock, Limousin being the chief breed. Cattle rearing was of great importance in the Haute-Vienne and Creuse, where it provided one of the staple pastoral occupations to both departments. Both too, have a considerable "export" trade of cattle, supplying draught oxen to Poitou and the Vendee. In Paris, also the Limoges region found a ready market for all exportable livestock.

Sheep numbering some 950,000 head, were all important to the pastoral activity of the region, and amounted to 9.5% of the nation's total. On the whole, the sheep of the Limoges region, are noted particularly for their wool.

Pigs which are good both qualitatively and quantitatively, are reared in many parts of the Limoges region. Before the war there were nearly 750,000 animals in the region constituting over 10% of the French total, more than a quarter being concentrated in the department of Correze. Limousin and the Perigourdin breeds are among the chief stocks of the region.

Goats are scattered through the departments in small numbers. The department of Indre, is the chief poultry rearing center in the region. Here chickens, geese and turkeys are widely bred. Geese and chickens were the mainstay of all departments except the Haute-Vienne where poultry numbers were small.

General:

In pre-war days the Limoges region was self-sufficient in most of the staple foods. Sugar and wine were the only commodities showing an appreciable deficiency. The balance of wheat and rye for the region before the war amounted to some 100,000 tons.

The pre-war potato surplus was about 450,000 tons, of meat about 100,000 tons, of milk about 30,000 tons. The small fat balance of 5000 tons is now turned to a deficit of about 1500 tons. Of sugar there always has been a gross deficiency, 32,000 tons annually, which now, owing to reduced consumption effected by food rationing, has been calculated at 18,000 tons. In wine there was a net deficiency, which restricted wartime consumption has reduced from the pre-war level of nearly 200,000 tons to about 40,000 tons. While the general position in the Limoges region has somewhat deteriorated during the war it is obviously superior to that of other industrialized regions. On the whole, the rural population of the region, are not suffering deprivation.

Food Industries:

The Limoges region as a whole is important for the cultivation of fruits and vegetables, and a canning industry of some significance was developed in the pre-war period. The cultivation of cereals was of secondary importance so that, although a number of flour mills of medium size, equipped to serve local needs, are to be found, there are no modern establishments such as Grand Moulins de Bordeaux in the neighboring region. The region lies outside the sugar beet growing area, and is not within easy access of any port for the import of cane sugar, so that there are no sugar factories or refineries.

Grain Milling:

A number of flour mills are to be found scattered throughout each department, though they are as a general rule small or of medium size. The

five largest mills in the region are:

- (1) The Minoterie Cantin at Rouilly (Indre), daily grain capacity 40 tons.
- (2) A. Lumeau et Fils at Issoudun (Indre), daily grain capacity 35 tons.
- (3) Labertonniers at Argenton (Indre), daily grain capacity 25-50 tons.
- (4) The Ets. J. Mirault (Indre), daily grain capacity 25-50 tons.
- (5) Lazarche at Chevreix-Cubas (Dordogne) daily grain capacity 25-50 tons.

The following table shows mills known to have a capacity of over 5 tons per day: (1936 census).

Department	5-10 tons	10-25 tons	25-50 tons	Population of Departments
Correze	11	4	--	262,000
Creuse	9	8	--	201,800
Dordogne	24	10	1	387,000
Indre	15	12	4	245,600
Haute-Vienne	14	8	--	333,600

Market Gardening and Canning:

In addition to the usual selection of market garden produce grown in the river valleys, and chiefly in the arrondissement of Brive (Correze), cider apples, walnuts and chestnuts, are important products. Nuts, of which large quantities are harvested from the forests of Dordogne and Haute-Vienne, figured prominently among the exportable surpluses of the region. These fruits are widely consumed as articles of the table diet by the local inhabitants.

From Brive (Correze department), the biggest market garden center of the Limoges region, primeurs of many varieties, including asparagus, peaches, peaches and cherries, as well as mushrooms are normally dispatched to Paris. Smaller quantities are also grown in the Dordogne and Indre. The truffles of the Perigord (Dordogne) famous for their abundance and quality, were formerly an important export.

Although it is not so important, as the department of Vaucluse in the Marseilles region, the chief fruit and vegetable canning area in France, the canning industry of the Limoges region is not without significance. As is usual throughout the country, the establishments, at which the canning is carried on, are mainly small. Perigueux in particular is an important center for the industry, where the canning of fruit, vegetables and meat are carried on, but the activity is fairly widespread throughout the departments of Dordogne and Correze. Special mention should be made of luxury products, which include the truffles of Perigord particularly noted in the towns of Brive, Objat, Tulle, Perigueux and Sarlat, the foie gras of Perigueux and Sarlat, and the mushrooms of Perigueux.

The canning industry gave rise to the development of factories for the production of cans, which were set up in Perigueux and Sarlat, though it is doubtful whether these were adequate for regional needs. No specific information is available as to the activity of the canning industry, but cans are known to have been in very short supply throughout the country, so that it is unlikely that this region, which moreover, is not easy of access, has been able to obtain supplies. It is improbable too that the sugar has been available for fruit-canning or jam manufacture.

Dairying:

Dairying does not play a prominent part in the cattle farming of this region, although formerly milk production was reasonably high - some 6.8 million hectoliters, nearly 4.75% of France's total liquid milk output. The departments of Haute-Vienne and Creuse had the highest milk output, together producing over half of the regional total. Milk yields were low. Only in the Dordogne did the annual yield per cow exceed the national average of 1700 liters, while in the Correze this figure was only 950 liters.

The manufacture of dairy produce was negligible, butter and cheese amounting to 1.5% of the gross French production. Only in the Indre did butter output, and in the Creuse did cheese production exceed 1500 tons annually.

Wine:

Just over 3% of France's wine is produced from this region, 80% of the total of 1.4 million hectoliters being produced in the Dordogne. Smaller quantities came from the departments of Indre and Correze. Bergerac and its environs were the chief wine centers in the Dordogne, and the arrondissement of Brive, in the Correze. Liqueurs are distilled

from both locally produced and imported wines, in the departments of Haute-Vienne and Dordogne.

The pre-war deficiency of wine for the region was about 200,000 tons. The restricted wartime consumption has reduced this deficiency to about 40,000 tons annually.

Miscellaneous Food Industries:

There are small biscuit factories in Chateauroux, Le Blanc (Indre) and Limoges, and a small chocolate factory in Limoges. A few breweries are to be found, notably in Limoges, but brewing is of very minor importance in this region, where wine is the normal beverage. Honey is an important product in the Indre and mustard is manufactured at Chateauroux. In the Sarlat district (Dordogne), and in the department of Creuse, the extraction of oil from nuts is carried on, on a small scale.

The Toulouse Region

Departments: Lot
 Lot-et-Garonne
 Gers
 Hautes-Pyrenees
 Basses-Pyrenees
 Tarn-et-Garonne
 Haute-Garonne
 Ariege
 Tarn

The departments of Lot, Lot-et-Garonne, Gers and the Hautes-Pyrenees are in the province of Guyenne-et-Gascogne.

The department of the Basse-Pyrenees is in the province of Bearn.

The departments of Tarn-et-Garonne and Haute-Garonne are partly in the province of Guyenne-et-Gascogne and partly in the province of Languedoc.

The department of Tarn is in the province of Languedoc.

The department of Ariege is partly in the province of Guyenne-et-Gascogne, partly in the province of Foix and partly in the province of Languedoc.

General:

The Toulouse region is in no way a topographical entity. To the south, lies the high folded mountain barrier of the Pyrenees, which separates France and Spain. To the northeast is the southwestern dip slope of the Massif Central. To the west and northwest stretches the Basin of Aquitaine. The dip slopes of both the Pyrenees and the Massif Central fall within the area, and a series of plateaux marks their merging into the plain. (The Quercy and the Albigeois plateaux, the Lauragais plateau and the Plateau of Lannemezan).

The region has two outlets to the sea. In the northwest to Bordeaux and the Gironde, via the Garonne Valley, and in the east to Sete via the Carcassonne gap (the route used by the Canal-du-Midi). In addition, the estuary of the Adour river, on which stands the secondary port of Bayonne, forms an outlet in the southwest of the region.

The region as a whole is not densely populated, although during the war there has been an influx of population into the region on a considerable scale. The estimated increase of the population from 1936 (census figures) to 1944 is from 2,286,100 to 2,610,000 people. The most marked increases are to be noted in the departments of Ariege, Haute-

Garonne, Lot-et-Garonne and Haute-Pyrenees. The majority of these people were evacuees who came in 1940 from Northeastern France, Holland and Belgium, and to a lesser extent from the Paris area. These refugees included about 50,000 from Alsace-Lorraine. A considerable proportion of the foreigners have in all probability since returned, together with fair numbers of nationals from Alsace-Lorraine, though a greater percentage of the French evacuees are thought to have remained.

Industrialization:

The immediate pre-war period was marked by a definite policy to extend the development of the electro-metallurgical industry of the Pyrenees and the southern edge of the Massif Central and, indeed, the establishment of factories in the departments of Ariège and Tarn-et-Garonne was rather more rapid than the construction of hydro-electric power stations and barrages destined to feed them. A number of plants for the production of aluminum, magnesium and light-metal alloys were established in the above named departments and, in addition, there are iron and steel works of some significance in the region, a considerable armaments industry and one works specializing in the production of cast-iron piping.

The Albi-Carmaux coal basin, the department of Tarn, provides about 1,100,000 tons of coal (1943) annually, representing little over 2% of the French total pre-war production of coal (46,000,000 tons).

Experimental drilling for oil in the foothills of the Pyrenees was carried out during the last war and during the period 1920-30. Work was resumed in 1938 and prospects seemed to be promising when the first production of oil and gas was obtained in the Saint-Marcet field near Saint-Gaudens in 1939. After the Franco-German Armistice work was interrupted owing to a shortage of skilled labor and materials, but was resumed in 1941, since when a number of wells have been drilled around Saint-Marcet.

A few engineering works are scattered throughout the region. The general topographical features which make transport difficult in the region made the development of the constructional engineering works impracticable. The principal centers of population, such as Toulouse and Tarbes, are known to be equipped with a number of engineering shops, and several factories in the region specialized in the production of agricultural machinery, though the majority were establishments of not more than medium size.

The boat building industry of the Toulouse region is confined to Bayonne (Basses-Pyrenees), where there are a few firms constructing small craft, such as barges and fishing boats, and undertaking repairs.

There has been a great development of the chemical industry in the Toulouse region in recent years, as, on account of the abundant supplies of running water in the Pyrenees, and to a lesser extent in the Massif Central, hydro-electric power can be cheaply produced, and this has led to the establishment of a number of plants for the production of calcium carbide and cyanamide. In addition to the above production, the manufacture of nitric acid, synthetic ammonia, fertilizers and magnesium is well developed in the region. The production of aluminum oxide in the department of Ariège amounted to 6000 tons in 1943, representing about 8% of the respective production of German occupied Europe.

The woolen industry of the Toulouse region is centered mainly in the departments of Tarn and Ariège. Toulouse itself is an important commercial center for the distribution of hides and skins and also possesses a number of factories for the manufacture of footwear.

Adequate supplies of pinewood from the Pyrenees which provide the raw material for the production of pulp, and the swift running streams which serve the double function of providing power for the mills and water for processing, have combined to encourage the development of the paper industry of the Toulouse region.

The region is primarily rural, and in each department the number of persons engaged in agriculture and forestry greatly exceeds the number of industrial workers.

Agriculture:

The Toulouse region is extensive, comprising the western and central Pyrenees and the southwest edges of the Massif Central, as well as the rich plain of Limagne and the deep fertile valleys of the Garonne, Lot, Tarn and Campan.

The region is predominantly agricultural, with pastoral farming generally taking precedence over crop cultivation, although an important production of maize in the Basses-Pyrenees, and vines in the Gers should be noted.

The size of holdings varies considerably. In the majority of the departments of the region the number of holdings farmed by the occupiers corresponds to the French average of 60%, although in the Haute-Garonne the proportion of land that is owned falls below this figure, and in the Hautes-Pyrenees the percentage is as high as 80%. The system of "metayage" (*) prevails more in southwestern France than in any other part of the country (higher than the 10% average for France).

(*) The "metayage" system, by which the farmer pays for the rent of the land in kind, the owner furnishing the necessary stock and seed.

Although the standards of agriculture is not uniformly high, in the valleys, plains and fertile pockets where crop production is concentrated, produce is of good quality. The number of tractors in the region was formerly 3800 representing over 12% of the French total.

Mechanization was widespread in those departments where the proportion of arable land was highest, namely the Haute-Garonne, Gers, Lot-et-Garonne, Tarn and Tarn-et-Garonne. (*) The usage of artificial fertilizers is limited, and the average consumption per hectare on arable, market garden and vine producing land is low. Yields are everywhere extremely poor. Only in the Basses-Pyrenees and Ariege does the output of maize (2.7 tons per hectare) and potatoes (12.2 tons per hectare) exceed the French average of 1.6 and 11.3 tons respectively.

Toulouse is not, technically, an "overall" surplus area, and although interdepartmental trade is substantial, the region does not export large quantities either of food or of manufactured foodstuffs. Even before the war Toulouse was never self-sufficient in food supplies. Wheat and meat were the only crops of which there were substantial surpluses, some 50,000 and 80,000 tons respectively. Potatoes, in spite of a relatively high local output, were deficient for local consumption and the region had to import some 200,000 tons annually. In sugar and wine there were also net deficiencies, over 50,000 tons of sugar and some 140,000 tons of wine. Fats were probably adequate, although supplies of oil were entirely lacking. The favorable milk balance did not exceed 8000 tons.

Cereals:

Quantitatively wheat is the outstanding cereal of the region. In pre-war years the annual average production, which exceeded 500,000 tons, represented some 7% of the total French crop. Wheat is cultivated in the plains and in the river valleys of every department but it is the Garonne valley that can be termed the most productive single area of Toulouse. Output in the Haute-Garonne formerly amounted to about 20% of the regional total. In the departments of the Gers, Lot-et-Garonne and Tarn production was also high.

The crop of rye and barley is negligible, that of oats somewhat better the pre-war harvest of 200,000 tons representing about 3½% of the total French output.

Large quantities of maize are cultivated, mainly on the foothills and lower mountain slopes of the Pyrenees. Altogether 66% of France's maize output is grown in the Toulouse region.

(*) Some 9% of France's gross arable land is in the Toulouse region.

Potatoes:

Before the war potatoes were cultivated in abundance, and the gross crop which amounted to some 950,000 tons provided a substantial surplus for export. Small quantities of this product were harvested in every department, but from the Ariege and Tarn alone about 50% of the total was contributed.

Tobacco:

Nearly 25% of France's tobacco is gathered in the Toulouse region, the departments of Lot and Lot-et-Garonne being important centers.

Livestock:

This region, owing to extensive pasture lands is rich in livestock, chiefly cattle, sheep and pigs. Horses and mules are less numerous (140,000) than any other category of livestock in the region. The Massif Central and the Pyrenees, particularly the departments of the Basses-Pyrenees, and the Ariege, are widely known as important mule breeding centers. Mules are used for draught and export, mainly to Spain. Anglo-Arab horses, the chief breed of the region, are reared in the Basses-Pyrenees, the Haute-Garonne, Tarn and Tarn-et-Garonne. A pure Arab stock is bred in the Haute-Garonne.

Cattle, which number over 1,250,000, amount to nearly 9% of the French total stock (Gascony breed).

Sheep numbered before the war well over a million and amounted to 11.5% of the French total stock. Chief breeds are the "Races de Pyrenees, Ariegeois, the Lacaune and the Lauragnais."

Pigs, mainly of the Pyreneenals breed, numbered nearly 750,000 and are found in every department. Numbers are highest in the Basses-Pyrenees. The northern departments of the Toulouse region constitute the most extensive geese producing areas in France. Poultry production is high due to the abundance of maize.

Current Food Production:

German food rationing has attempted, by the means of reduced consumption, to secure the food position. Because, however, regulations have not been rigorously enforced, and because the peasants have evaded much restricted control, it is known that deficiencies have not been so effectively cut down, or surpluses augmented to the extent calculations might imply. Producers retained quantities of their products for illegal purposes, for hoarding, sale on the black market and "local" consumption. The following figures have attempted to make allowances for these activities. Because, however, the quantities involved are naturally not ascertainable the calculations should be treated with reserve.

It is thought that the balance of wheat may still be substantial. Approximately 35,000 tons may be available, that the meat balance amounts to 40,000 tons. The deficiency of potatoes around 150,000 tons, and that of sugar 30,000 tons. Fats are deficient by at least 8000 tons. The current wine ration, which by the high pre-war standards of southern France, is low, is such that the former deficit has been reversed. It is thought that a balance of some 70,000 tons may be available.

From these general indications one is led to conclude that the general food position of the Toulouse region is unsatisfactory, though some improvement should be noticeable after the 1944 crops have been harvested.

Food Industries:

A wide variety of food processing is carried on in the region and there is a considerable number of firms, most of which are small, undertaking this type of work.

Grain Milling:

The majority of the flour mills in the region are located in the departments of Haute-Garonne, Lot-et-Garonne, Gers and Tarn. Throughout the region there are only two mills with a daily wheat capacity of over 50 tons, the majority have a capacity of under 25 tons daily.

Macaroni is extensively manufactured in the region. The districts of Limagne, Toulousain and Albigeois produce hard wheat and consequently the production of macaroni is an old established industry. The majority of the works are located in the departments of Tarn, Haute-Garonne, Ariege and Hautes-Pyrenees. Practically all the macaroni produced is consumed in southwestern France.

Market Gardening, Fruits and Canning:

Fruit is the more important of the market garden produce which is grown in the valleys of the Lot and Garonne. Here plum trees are widely cultivated, the dried product, PRUNEaux D'AGEN, being a particularly important commodity for export. The apricots of Nicole and Tonnies (Lot-et-Garonne) are also well known. Plum, chestnut, apple and peach trees flourish in the vicinity of Toulouse, where there is also an important industry concerned with the crystallization and export of locally grown Parma violets.

Nuts, pears and apples, chiefly for cider, are gathered from the Pyrenees, as well as in the northeastern cantons of the Lot department.

Gherkins from the Haute-Garonne and Tarn-et-Garonne are a much cultivated vegetable, the pickling of which provides the basis for a canning industry. Truffles are gathered in the vicinity of Cahors, Souillac and Martel (Dordogne). The greater part of this produce, however, goes to Perigueux (Dordogne) for canning, although it is also processed in its own department.

Canning, more especially of luxury products is of some significance in the region. The department of Lot is noted for the production of truffles. Cahors, Martel and Souillac are the chief centers undertaking this type of canning. Some fish canning is undertaken chiefly at Saint-Jean-de-Luz and Cibourne. PATE-DE-FOIE-GRAS is produced at a number of centers throughout the region especially in the department of Haute-Garonne.

Wine Industry:

Vines are extensively grown in the valleys and on the lower mountain slopes, particularly those of Gers and Tarn. Nearly 25% of the region's total wine production, amounting to 450,000 tons per annum, 8.5% of France's gross output, is made from grapes harvested in the department of Gers.

The fertile vineyards of the Tarn department are found on the flanks of the wooded hills as well as in the stony plain. Wine produced here is good, the most reputable being that of GAILLAG. The sweet-water grape (CHASSELAS) of Tarn-et-Garonne is a much exported table fruit delicacy..

The best wines of the Lot-et-Garonne come from the Clairac and Buzet districts, while Cahors in the Lot Valley (the most productive area in the department) is known for wine, which is much blended both for local use and for export.

The red wines made from the dark grapes reared on the hillsides of the Lot are noted for their quality which nearly approaches that of the fine Bordeaux products. In addition to Cahors, Lusech and Puy l' Eveque are important producing centers. From the Hautes-Pyrenees came wines of MADIRAN and PEYRIGUERE, and from the Basses-Pyrenees those of JURANCON, near Pau are best known. Vineyards in the fertile plains of the Haute-Garonne produce large quantities of grapes, although the wine is of medium quality only. The best known brands are those of VILLANDRIC, FRONTON and CEPENS. Production in Ariège centers around PAMIERS.

Breweries and Distilleries:

Breweries are most numerous in the department of Haute-Garonne.

Toulouse is a center of some importance, there are also four breweries in the department of Tarn. Only two breweries have an annual capacity which attains to between 30,000 and 50,000 hectoliters, and it should be borne in mind that wine is the common beverage of the region. There are a number of distilleries in the region, chiefly in the departments of Hautes-Pyrenees, Haute-Garonne, Basses-Pyrenees and Tarn. Brandy is produced chiefly in the departments of Gers, Lot and Lot-et-Garonne.

Dairy Industry:

Dairy farming is not highly developed. Butter and cheese production was formerly very low, although milk output was reasonably good, the annual average of 8,000,000 hectoliters representing over 5.5% of the national production. Departments producing the greatest volume of milk were the Gers, Lot-et-Garonne and the Basses-Pyrenees. The annual yield of 3100 liters per cow, which prevailed in the Tarn-et-Garonne exceeded that of all other departments. Milk was supplied to local rather than to national markets, and before the war market centers such as MAZAMET were important for distributing supplies to neighboring departments. Co-operative dairy farming, on a limited scale only, is found in the mountains, compared with cooperative undertakings in Savoy (Lyons region) or Poitiers, however, the dairying activity of the region must be regarded as insignificant.

Chocolate and Biscuits:

There are a number of firms in the region producing chocolate, biscuits and other confectionery. Firms manufacturing confectionery are most numerous in the departments of Basses-Pyrenees and Haute-Garonne. The chief centers of production are Toulouse, Bayonne, Saint-Jean-Pied-de-Port, Tarbes and Albi. At Toulouse there is a factory of some importance producing crystallized violets.

Fishing:

Fishing was formerly carried on along the west coast of the Basses-Pyrénées, from the Bayenne and Saint-Jean-de-Luz, the two chief ports of the region. Annual catches, averaging 7000 tons, were landed by the fleet of some 560 ships which totalled approximately 3000 tons (1937). Personnel amounting to 2000 were occupied in this work. Owing to the stringent wartime conditions prevailing in the fishing industry it is unlikely that catches now amount to anything than a few hundred tons annually.

Some fish canning is undertaken chiefly at Saint-Jean-de-Luz and Cibourne.

The Bordeaux Region

Departments: Gironde
Landes

Both departments are in the province of Guyenne-et-Gascogne.

General:

The Bordeaux region has one great natural resource, the pine forests, which cover a large triangle in the department of Landes and the southern part of the department of Gironde bounded by the Atlantic coast, the river Adour and the river Garonne. These forests yield a timber, valuable mainly for pit props and railway sleepers, and resinous products, which have an extensive and various use. There are also cork oak forests, which provide a valuable source of cork.

The mineral resources of the region are negligible.

The industrial activity of the region is confined to Bordeaux and its immediate district.

Food production is not important in the region as a whole, which is deficient in most of the essential foodstuffs.

Its vineyards, however, are of first importance, and many famous vintages come from the lands bordering the Garonne.

Bordeaux, as a port, is normally a food producing center of some significance.

The region is not a primary center for the generation of electricity, but it is well served by roads and railways, which focus on Bordeaux.

Industrialization:

There is no highly developed metallurgical industry in the Bordeaux region, as, apart from some lignite deposits, it is entirely deficient in iron ore, coal, and other mineral deposits. The port of Bordeaux, however, was in normal times a shipbuilding center of some importance, and until the decentralization scheme of the spring of 1944, on account of air raid damage, it was also the center of a flourishing aircraft industry.

The works of the Etablissement Metallurgique de la Gironde on the Quai de la Souys at Bordeaux are equipped with rolling mills and manufacture tinplate and iron and zinc sheets. Normally 700 workers are employed. The production of tinplate has stopped owing to lack of tin. The

Bordeaux factory of J. J. Carnaud produces cans for the food industry, and the Ets. Betts et Blanchard at Floirac manufacture collapsible metal tubes and bottle caps; 180 workers were employed in 1943.

The S. A. Francaise Timken, a firm of American origin whose principal works in France is at Asnieres (Seine), is reported to have a small factory at Bordeaux. Tapered roller bearings are the principal product of this firm. There have been no recent reports of activity at the Bordeaux works.

The region is very important in the production of certain chemicals. The Bordeaux district is one of the principal areas in the southwest of France for the production of sulphuric acid. There is also a number of firms in the Bordeaux district manufacturing fertilizers, insecticides and sprays for agricultural uses. These are mostly small concerns.

The Bordeaux region is of special importance in the production of resinous products, on account of the extensive pine forests in the department of Landes. The maritime pine furnishes turpentine and resin for the manufacture of various products. Tar and charcoal for smelting purposes are also obtained from pine wood. Crude turpentine is the oleo-resin yielded by certain coniferous trees. "Bordeaux turpentine" is obtained from the cluster-pine in the Landes.

Although not comparable with Marseille, the Bordeaux region is, nevertheless, of some importance for the production of soap. The rosin of the Landes has given rise to the preparation of cheap grades of soap, while soap manufacture is normally a subsidiary of the vegetable oil industry of Bordeaux. A judicious mixture of the two raw materials has led to the production of a fair quality soap at a cheap price.

The extensive forests of maritime pines in the Bordeaux region yields a timber suitable for the production of wood pulp, and, for this reason, a number of pulp and paper mills have been established. It is also to be noted that the pines provide a valuable source of the rosin which is used as a sizing medium in the production of certain grades of paper.

There are two important mineral oil refineries in the Gironde estuary, but they are inactive since the Armistice. There are also considerable oil storage facilities in the area at Saint-Loubes, Blaye, Furt, Bourg, and Bassens.

The region is of some significance in the production of leather. There are several tanneries, located chiefly in the Bordeaux district, which produce industrial and sole leather.

There is no textile industry of any importance in the region.

In normal times Bordeaux was the third most important rubber market in France and crude rubber from the French colonies was imported through this port.

The Bordeaux region is one of the principal wine-producing areas in France, and in consequence there are a number of glass works manufacturing bottles in the industrial districts of Bordeaux.

The Bordeaux region, and especially the department of Landes, is one of the most forested areas in France and consequently has a wood working industry of primary importance.

There are three lime and cement works in the region.

Apart from the important center of Bordeaux, the region, as a whole, is sparsely populated, and little industry is carried on. The normal industrial labor force is therefore small, and a large proportion of it is to be found in the town of Bordeaux and its adjoining suburbs.

Agriculture:

The two departments comprising the economic region of Bordeaux, the Landes and Gironde, present strong contrasts in their agriculture. While the Gironde, watered by the Garonne and the Dordogne, is a fertile department, rich in vines and market garden produce, the department of Landes, as its name indicates, consists mainly of sandy stretches thickly planted with pines, except in the southern extremity, the CHALOSSE district.

Towards the end of the 18th century maritime pines, which bind the sand together with their roots, were planted in the Landes, and, indeed, all along the west coast in this vicinity, to prevent the dunes from advancing east and burying all cultivated and cultivatable land. Today, therefore, the physical layout of the department of Landes is such that a protected "Dune Littorale" runs from north to south of the department, thus preventing the formation of fresh dunes. In the extreme south and west, cork oaks have been planted. On the east side of the dunes, scores of small lakes are separated from the sea by the heaping up of sand. Generally, however, the salt water has escaped and the lakes are now filled with fresh water. The Basin of Arcachon in the Gironde, however, still communicates with the sea.

The unproductive sandy stretches, the "landes," also cover about one third of the Gironde. Here, as in the Landes, interconnecting lakes fringe the dunes, communicating not only with each other but also with the Arcachon basin. The basin which is notable for the many islands it contains, forms a vast shallow lagoon on the land side, much of which has drained and converted into arable land.

The comparative poorness of soil in the Landes is counterbalanced by the fertility of La Chalosse. This district, which lies south of the Adour, is a fruitful hilly region, cut by tributaries of the main river, rising in the Pyrenees. Saint-Sever, on the Adour, is an important center of the locality.

Like the foregoing, the department of Gironde, which takes its name from the estuary formed by the rivers Garonne and Dordogne, can also be divided into two parts, for agricultural purposes. On the west the "landes" stretch from north to south, but inland, on the eastern side, are fertile districts, productive, but limited in area.

There is a high proportion of forested land in both these departments. Over 40% of the total area in the Gironde, nearly 70% of that of the Landes, figures which jointly represent 10% of all France's forests.

Of the population, numbering just over 1,000,000, some 203,000 people are engaged in agriculture, 36% of the total working population in the Gironde, and over 60% of those in the Landes.

Land holdings in the Gironde are small, 86% of all farms being under 10 hectares and half of that number being under 1 hectare. In the Landes, on the other hand, nearly 50% of all holdings are of ten to fifty hectares, and only 45% under ten hectares.

"Metayage" (*) is high, representing 20% of all holdings in the Gironde, and nearly three quarters in the Landes.

Mechanization is limited, with few large scale, up-to-date farms.

Fertilizer usage was formerly low, though considerable quantities of potash were employed in the Gironde.

Owing mainly to the light sandy soils yields were low, everywhere less than the low national average of France.

Cereals:

Arable land, representing less than 1.5% of the French total, is 12% of the total area of the Gironde, against 18% in the Landes. Cereals are not cultivated in substantial quantities in either department, only wheat, maize and rye are grown in any appreciable amounts, and the greater proportion of these are harvested in the Chalosse district.

(*) The "metayage" system, by which the farmer pays the rent of land in kind, the owner furnishing the necessary stock and seed.

Wheat is moderately important throughout the Gironde, where in many places it is grown between the rows of vines, notably in the Blaye and Libourne districts. This crop is also raised in parts of Bazadais, and in the Bas Medoc. Maize, the only really flourishing crop represents 16% of the French output. Some 85% of this harvest was formerly gathered in the Landes, which is one of the three biggest maize producing departments in the whole country.

Potatoes:

A fair quantity of potatoes is harvested in the Gironde, but little in the Landes. The yield does not exceed the French average, although the sandy soil east of the dunes has, on the whole, proved satisfactory for production.

Livestock:

The rearing of livestock does not figure prominently in the rural economy of the Bordeaux region, as the Landes in particular offers only limited facilities for fodder growing and cattle grazing. A few hundred thousand horses of the Landes breed and "Variete Medocaire" of cross-bred Anglo-Norman stock, are found chiefly in the south and southeast parts of the region. Cattle, amounting to nearly 2% of the French total stock, number some 290,000. The BAZADAIS breed of oxen and BORDELAIS milch cows are also bred in the region. The all-in current livestock position is little better than that prevailing throughout the country as a whole. The output of farmyard produce is considerable. Saint-Sever is a particularly important breeding center, not only for ducks and chickens, but also for geese.

General:

Information regarding the current food position in the Bordeaux region is not available. Little reference is made in current reports to specific shortages in Bordeaux, or to particular departments being earmarked for the purpose of supplying Bordeaux with certain foodstuffs, as is done in the case of Paris.

It has been calculated that in pre-war days this region was deficient in every staple food except wine, and probably milk. Some 125,000 tons of wheat and rye were imported annually (*), approximately the same quantity of potatoes, some 25,000 tons of sugar, and about 10,000 tons of meat. There was also a net deficiency in fats. The wine surplus was reckoned at 200,000 tons. It is true that war-time rationing has

(*) 50,000 tons of wheat and 25,000 tons of rye were produced annually in the region between 1936 - 1938.

restricted consumption, and therefore theoretically mitigated deficiencies. Taking, however, all available facts into consideration, it is estimated that the food position in Bordeaux is definitely unsatisfactory. Fats, the ration of which is rarely honored anywhere in France, are here totally deficient. At present scales of consumption, as near as it can be gaged, wheat and rye are deficient by 80,000 tons, potatoes by 90,000 tons, sugar by 14,000 tons, and meat by 8,000 tons. Milk and milk products, if not deficient, are likely to be limited in quantity. Only in wine does the balance approach the pre-war surplus level.

Food Industries:

It is important to remember that although Bordeaux is not an outstanding region from the productive point of view, it possesses an exceedingly well-placed and well-equipped commercial port. Formerly, many food-stuffs, such as sugar from the Antilles and ground nuts and palm kernels from Senegal, were imported for processing in this flourishing center.

In addition to the variety of canning and preserving factories for fruit, fish and meat that are found mainly in the vicinity of Bordeaux, flour mills, distilleries, sugar refineries and biscuit factories are also established.

Grain Milling:

Wheat production in the region is relatively small, and there are consequently few flour mills with a daily capacity of over 5 tons, in the Gironde about 14 mills, and in the department of Landes about 15 mills. There is, however, at Bordeaux, one extremely important mill, the Grands Moulins de Bordeaux. It is one of the largest and most modern mills in France, and wheat imported from North Africa or from America was formerly milled.

Wine Industry:

Wine making in the Gironde is the outstanding agricultural activity of the region. The wine Bordeaux, which is the most important single product of the region, represented in pre-war years over 9% of the total French harvest. Almost the whole output of over 4.75 million hectoliters was made from grapes grown in the department of Gironde.

The wines of Bordeaux, reputed to have been on the tables of the Caesars in the fourth century, are of a high quality, the standard of which is jealously preserved by the many local manufacturers.

Bordelais, the great vineyard district of the Gironde, is divided into several distinct and large wine producing regions, which are as follows:

1. Le Medoc, on the left bank of the Gironde and the Bordeaux up to Blanquefort.
2. The Graves country, which covers the area between the "basin" of Blanquefort and the canton of Podensac, stretches along the left bank of the Garonne from the environs of Bordeaux to Barsac.
3. Sauternes, stretching from the communes of Sauternes to the neighboring communes of Farques, Preignac, and Barsac. Generally speaking, white wines are the most important product of the above, perhaps the most popular of which is Le Chateau Yquem.
4. Entre-Deux-Mers lies between the right bank of the Garonne and the left bank of the Dordogne, up to the Bec d'Ambes. The district also produces good white wine.
5. Lastly, on the right bank of the Dordogne, the Libournais, together with the old regions of Saint-Emilion and Pomerol constitute an area where excellent red wines are produced.

A subsidiary activity in the region is the production of sparkling wines by the "Champagnisation" process, which has developed over the last quarter of a century in the Gironde. The appellation "Champagne" is legally confined to the Champagne district of northern France. The art of producing sparkling wines, however, was extended, and the people of the Bordelais vinegrowing regions were among the first to adapt the secret of the art to their own local resources. The process of "Champagnisation" is now carried on extensively in the department of Gironde, notably at the centers of Cubzac-les-Ponts, Saint-Emilion, and Preignac.

Sugar Refineries:

Bordeaux has for centuries been a port of primary significance for the South American and West Indian import trade, and sugar refining, which in this region, relies on imported cane sugar, is an old-established industry in Bordeaux, dating back to the seventeenth century. Some few years before the war the old-fashioned sugar refineries in Bordeaux were struggling against competition from the more modern factories in Northern France, as well as the effect of "dumping" by foreign firms. As a consequence, the old refineries of Saint-Remi, Fruges Tivoli and Saint-Croix merged to form the Raffineries de Bordeaux controlled by Soc. des Raffineries et Sucreries Say, and one important establishment was set up in the Rue Achard in the Bacalan district.

The new refinery is well equipped with modern plant and can treat all qualities of raw sugar on the market. All types of sugar were produced and it was estimated that, in the immediate pre-war period, about 1,000 workers were employed.

The Bordeaux refinery supplied southwestern France and had also a considerable export trade with Algeria, Tunisia, Morocco and French West Africa. It has been reported that the refinery was damaged by aerial bombardment in February 1943, but the extent of the damage is unknown.

Fruits and Vegetables:

Although the total area given over to market garden cultivation is small (9000 hectares in the Gironde, and 5000 in the Landes), it represents some 3% of the French total, and is not inconsiderable. Chiefly beans are grown in the Landes, but in the Gironde market garden produce is prolific. Horticulture is especially developed in the eastern part of the department, particularly in the river valleys. Beans are generally regarded as the most important single product, and it is estimated that one third of the harvest of this crop was consumed locally and about two thirds was conserved. The artichokes grown at Macau are world famous and thrive in the alluvial soil of the Garonne. Peas, asparagus, Cauliflowers, peaches and fine pears are among other products widely cultivated. Apples, plums and cherries are grown around the Gironde estuary, in the Bordelais, in the districts of Blaye, Libourne, Graves and Langonnais, as well as in the cantons of Carbon-Blanc, Creon, Cadillac and Targon. These products, together with many imported goods, serve to feed the canning centers at Bordeaux, although it seems clear that large quantities of these products are consumed locally or exported to Paris. Today there are indications that transport difficulties hinder the export of any surplus produce that may be available. Truffles, a particularly famous French product, are found in the Landes.

Canning:

There is a canning industry of considerable importance in the Bordeaux region. Meat, vegetable and fruit canning are carried on on a moderate scale, and a certain number of firms undertake the bottling of truffles and the production of CHARCUTERIE.

Fish canning is a leading industry in Bordeaux. The fishing port of Arcachon is notable for its sardine canning. It was reported that at the end of 1943 experiments in the methods of preserving fish were being carried out in the refrigerator plant at Arcachon. It is interesting to note that cans are normally manufactured in Bordeaux, where, a factory of the important firm of J. J. Carnaud et Forges de Basse-Indre is situated.

Fishing:

In pre-war days fishing was an important occupation, centering around the Basin of Arcachon, Gujen and Bordeaux. At Arcachon, oyster breeding was extensive, while along the coast anchovy and sardines were caught, and tunny in the deeper waters. There are indications now that the fishing position has seriously deteriorated. Not only has the requisitioning of trawlers from the fishing fleets and the fuel shortage hampered operations, but labor shortages, mined waters and general war time restrictions suggest that fishing may be limited to very local regions, and probably even to the lakes along the "Dune Littorale."

Recent figures indicate that the catches landed at Arcachon contain a far larger proportion of oysters to fish than was formerly the case. It was reported that in January, 1944, a total tonnage of 1400 tons of oysters and 800 tons of fish were landed in the "Southwest Region," as against 380 tons of oysters and 2100 tons of fish in January, 1939. The forces of occupation earmarked a large proportion of the season's catch of fish for canning.

Dairy Industry:

Meadows and pastures amount to 13% of the Gironde department and 5% of the Landes department. Cattle number some 290,000 in the region. Various herds of mixed breed are found. The milk gathered from these animals is collected and bottled and sent to Roquefort for cheese making purposes.

Milk yields in the Landes were formerly low, although in the Gironde they were high, more than double the national average, averaging more than 3600 liters per cow per annum. The total quantity of milk produced was relatively small, and as a consequence butter and cheese output was negligible.

Chocolate and Biscuits:

Bordeaux is a center of some importance for the production of chocolate and biscuits. Among the more prominent works, mention should be made of the chocolate factory of the S. A. du Chocolat Tobler at Talance, the biscuit factories of Biscuits Olibet at Talance, the Biscuiterie Curat-Dop at Pessac, and the factory of Louit Freres et Cie. at Bordeaux, which manufactures chocolate, cocoa, mustard and various preserves. In addition there are a number of small chocolate and biscuit factories. It must be expected that at the present time activity will be negligible owing to lack of raw materials.

Vegetable Oil Refineries:

The extraction of vegetable oils from ground nuts is an old established industry in Bordeaux, since the port occupies a favorable geographical position for shipments of ground nuts from French West Africa, chiefly from Senegal. Bordeaux is second in importance only to Marseilles for the production of ground nut oil, and it was estimated that, in the pre-war period, some 48,000 tons of vegetable oil and 60,000 tons of oil-cake were produced annually. Bordeaux normally imported each year 150,000 tons of ground nuts, and it was estimated that in 1935, 1500 workers were directly employed in the industry.

Since the vegetable oil industry relies entirely on imports from overseas, the refineries must be expected to be largely inactive at the present time.

There were four outstanding firms which specialized in the crushing of ground nuts for the manufacture of refined vegetable oil and oil cake. The Grande Huilerie Bordelaise at Bordeaux is believed to be one of the most modern and best equipped of its kind in France. Edible ground nut oil, household oil and oil cake were normally produced at this establishment, which has an annual crushing capacity of 80,000 tons.

Apiculture:

Apiculture is widely practiced and quantities of honey are produced, mainly for export. In the arrondissement of Mont-de-Marsan (Landes) and in the Gironde, the many acacia plantations, and the stretches of heather, are an asset for bee keeping. Indeed, the districts have been classified as among the best in France.

Cold Storage Depots:

Bordeaux, as an important commercial port, has considerable cold storage facilities. The largest and most important depot in the Bordeaux district is the Gare Frigo-Maritime de Bordeaux at Bassens. This plant is not only a cold storage depot, but a freight station, and is situated very near the wharf. The plant has a total capacity of 8,000 cubic meters and is equipped with four chambers for frozen meat, having a capacity of 1,000 tons each. This plant is owned by the Compagnie des Entrepôts Frigorifiques et Docks de la Gironde, which also has two other cold storage depots in Bordeaux. The second plant has a total storage capacity of about 5600 cubic meters (2000 tons of meat). The third plant has a capacity of 7,740 cubic meters (2500 tons of meat).

The Poitiers Region

Departments: Vendee
Deux-Sevres
Vienne
Charente-Inferieure
Charente

The Vendée department is in the province of Poitou.

The Charente-Inferieure and the Charente departments are in the province of Saintonge. The northernmost part of Charente protrudes into the province of Poitou.

The Deux-Sevres department is in the province of Poitou, but its northernmost part extends into the province of Touraine.

The Vienne department is in the province of Poitou.

Topography

Geographical differences make it difficult to generalize about the region, and therefore it seems advantageous to examine the topographical features of the 5 departments.

Apart from the rising land which marks the northwestern extremity of the Massif Central, the Vienne is almost entirely a plain, with a high proportion of its land arable. The Charente, by contrast, is hilly, sloping gradually from the granite uplands of the TERRES-FROIDES in the Maritime, drained in the central part by the river Charente, is a department of plains with a few low hills, and contains a large proportion of arable land. It has, in general a flat, marshy coast, as have the offlying islands of Oleron and Re. The Deux-Sevres, a well watered department, takes its name from the two rivers which drain it, the Sevres-Niortaise and the Sevres Nantaise. This department has many features in common with the Vendee.

Industrialization:

In this essentially agricultural area, which has only small coal resources and no mineral deposits, the metallurgical and engineering industry is not of primary importance. Some establishments, however, merit special attention, and these include the State arms factory at Chatelleraut, the State gun foundry at Ruelle, and the rolling stock constructional and repair facilities at Saintes, Aytre and Pons. The general agricultural nature of the area is emphasized by the number of plants, which, in normal times, manufactured agricultural machinery. The chief center for the production of agricultural machinery was NIORT in the department of Deux-Sevres.

Owing to the predominantly agricultural nature of the Poitiers region the chemical industry is mainly concerned with the manufacture of artificial fertilizers. The majority of the larger plants are situated in the department of Charente-Maritime, La Rochelle-Pallice and Tonnay-Charente being the main centers of the industry. Since 1942 the industry has suffered from a severe shortage of raw materials, as phosphate rock was imported mainly from French North Africa, while Spain and Portugal supplied the iron pyrites from which sulphuric acid, an essential constituent of superphosphate fertilizers, is manufactured.

The comparative importance of the production of superphosphate fertilizers in the region in the pre-war period is illustrated by the fact that in 1936 the four plants in the Charente-Maritime produced a total of 142,050 tons, and the one in Poitiers 15,900 tons, out of a French total of 1,181,560 tons.

There are a few paper mills in the region located principally in the department of Charente, but none of these produces its own pulp.

The production of leather in the region is not on a large scale, the majority of establishments being very small. There are some 15-20 tanneries, mostly small, but one or two are important.

A large percentage of the total working population is engaged in agriculture, and the total industrial labor force, in normal times, is small.

Agriculture

General:

The Poitiers region is predominantly agricultural. The department of Charente in particular is a rich dairying country, and Charente butter is famous throughout France. Large quantities of cereals are grown, and there are also considerable areas under orchards and market gardens. The vineyards of the region are of first importance, it is, indeed, the famous COGNAC country. Fishing is carried on in the coastal zone, and fish canning is important in the La Rochelle district and in the department of Vendee.

Before the war, Poitiers, an economic region with varied physical make-up, was a flourishing agricultural area, producing a range of cereal and fodder crops, good wines, fruit, fish, and above all, fine cattle.

The population of 1.75 millions was formerly fairly equally divided among the five departments. The percentage of the population working in agriculture was 60% of all the gainfully employed, a figure far above the national average of 35%. Only in the Charente-Maritime, which has a relatively large fishing population, was the proportion less than 60%.

Holdings do not differ substantially either in number or size from normal. Approximately 48% of all holdings in the region were between 1 and 10 hectares, while over 30% were between 10 and 50 hectares. Forms of tenancy vary from one department to another.

The general standard of agriculture in the region is in no way exceptional. The region is not highly mechanized. Tractors numbered in all some 18,000, and nearly half of them were centered in the Charente-Maritime. This gross figure represents about 6% of France's total. The use of fertilizers was low. The quantities of nitrogen and potash applied to arable, market gardens and vineyards was about 50% of the average for the country. The usage of phosphates was formerly about average, though high in the Charente-Maritime. Yields are low and in almost every department they are poorer than the relatively poor French average.

Cereals:

Poitiers ranks among the three most productive wheat growing regions in France, contributing nearly 8% to her total harvest. The plains of Vendee and Vienne are the most prolific individual districts, with the central arable lands of Deux-Sevres running a close second.

Rye and Maize output is very small. Barley, too, totalled only 85,000 tons before the war, but represents nearly 8% of the national crop. The largest production of cereals is found in the Charente-Maritime, where output is more than one third of the regional total. Nearly 270,000 tons of oats were formerly grown in the Poitiers region, a total representing 6% of France's gross crop.

Potatoes:

Potatoes, which totalled some 630,000 tons, were extensively grown in every department, although nearly half of the output was produced in the Deux-Sevres and Vienne.

Sugar Beets:

Sugar beet production, which amounted to some 40,000 tons in the Charente-Maritime, and 20,000 in the Deux-Sevres, a crop which primarily supplies the distilleries of Melle, was negligible for the whole region.

Fiber Crops:

Limited quantities of fiber crops are produced in the three most northerly departments, the Deux-Sevres, Vendee and Vienne. Colza is harvested in all three, hemp in the first two, and flax in all but Deux-Sevres.

Livestock:

The breeding and fattening of livestock, chiefly cattle, and the production of milk and milk products plays a large part in the animal husbandry of the region. Pasture lands are good, with especially large tracts in the Vendee (nearly 1/3 of the total for the region), the Deux-Sevres and Charente Maritime. Fodder is also plentiful.

Formerly the region possessed nearly 9% of the country's total cattle numbers, which were concentrated firstly in the Vendee, and secondly in the Deux-Sevres. The chief breed of PARTHENAY are found not only in these departments, but also in the Vienne.

Food Position:

In spite of its agricultural productivity the Poitiers region before the war was largely dependent on imports for day to day food requirements. Only in meat and cereals were the surpluses considerable. The substantial wheat and rye balance, amounting to some 180,000 tons, went formerly to departments in regions as widely scattered as Bordeaux, Toulouse and Paris. On the other hand, it may be assumed that almost the entire meat balance of some 80,000 tons went to Paris. This was also probably true of the fat surplus totalling some 25,000 tons. It should be noted that although butter was primarily exported in substantial quantities, the region was heavily deficient in vegetable oil, of which there was generally a far higher per capita consumption than butter.

In milk the region was virtually self-supporting, with no exports. Large quantities of potatoes, over 200,000 tons, were obtained from the Angers and Rennes regions. Sugar was deficient by about 30,000 tons. It was further estimated that there was a deficit of some 60,000 tons of wine, the greater part of this amount being probably obtained from Bordeaux.

It is likely now that the Poitiers region, with its large rural population, is less hardly hit by the war from the point of view of food supplies than the industrial areas. The present surplus of wheat and rye has been estimated to be about 130,000 tons, and that of meat about 40,000 tons. It is known that regions other than Paris receive part of this former large balance. The estimated fat balance for the whole region has fallen to about 19,000 tons. Owing to restricted wine consumption there is estimated to be a surplus of 60,000 tons instead of the former deficiency of 60,000 tons.

Potato deficiency now amounts to about 15,000 tons, and that of sugar to some 18,000 tons. Milk is likely to have fallen to a deficit of 54,000 tons. The greater change over in this position is due primarily to the fall in production stressed above. It can be assumed that, providing fodder production is adequate, the position will rapidly right itself.

Grain Milling:

All the departments in the region have a large number of flour mills. Few of the mills have a daily wheat capacity of over 250 quintals. In the departments of Charente-Maritime and Deux-Sevres the majority of the flour mills have a daily capacity of between 100 and 250 quintals, while in other departments the majority have a capacity of between 50 quintals and 100 quintals. Only nine mills in the region have a daily capacity of over 250 quintals.

The following table illustrates the distribution of the flour mills in the region (1936 statistics):

1936 Statistics

Number of Flour Mills Classified According to Daily Wheat Capacity

Departments	50-100 quintals	100-250 quintals	Over 250 quintals
Charente	21	11	2
Charente-Maritime	8	22	4
Deux-Sevres	4	8	-
Vendee	21	9	2
Vienne	23	12	1

Canning, Fruit and Vegetables;

The department of Vendee has a fish canning industry of primary importance, which has developed in connection with the local fishing industry. The fish canning consists mainly of sardines in oil, sprats, small mackerel and tunny. The most important fish canning centers are Croix-de-Vie, Ile-de-Yeu, Noirmoutier and Les Sables-d'Olonnes. La Rochelle (Charente-Maritime) is also noted for the variety of its fish canning. No detailed information is available as to the present state of the industry.

Other commodities for canning are plentiful, and include fruit, vegetables and meat. Local specialties are puree-de-marrons, pate-de-foie-gras and preserved truffles. Ruffec (Charente) and Rochefort are the two most important canning centers.

Market gardening is localized. Niort, in the Deux-Sevres, is a good vegetable center, onions, asparagus and artichokes being specialties.

In the Vendee, in the drained alluvial areas to the south and north, cider apples and table fruit, including pears, peaches, plums and cherries were produced. There was also an important walnut crop. Chestnuts, cider apples and walnuts were also produced in the Charente in the region of the Terres Chaudes, and in the Vienne. From both these departments nuts figured in exportable surpluses.

Melons, peas, carrots and strawberries were grown in the fertile islands of Re and Oleron, with the result that primeurs were sent every year to the arrondissement of La Rochelle. The two Charente departments exported cider apples, walnuts and chestnuts.

Fishing:

Fishing played an important part in the domestic economy of Poitiers. Before the war its fishing fleet, composed partly of sailing boats and partly of steam trawlers, used to sail from La Rochelle, Esnandes and La Cotiniere on the Isle of Oleron, Les Sables-d'Olonne (Vendee) and Marennes in the Charente.

In 1933 it was estimated that nearly 15% of the numerical strength of the French fishing fleet sailed from ports in the Poitiers region. This represented something over 13% of the total fishing tonnage on which some 9000 men were formerly engaged. About 9% by weight of the total French catch was landed along this coast, a figure which excludes shell fish.

Mussels and oyster breeding, the chief industries on the Charente coast, had as their center La Rochelle, which, after Boulogne, was regarded as the greatest fishing port in France, and held first place among all ports on the Atlantic coast. The fish landed here was various and valuable. Cod, tunny, sole, mackerel, red mullet, turbot and sardines were included in the daily catch, much of which was exported not only to Paris, but also beyond the frontiers to Switzerland, Italy and Spain. Mussel breeding beds stretch along the coast into the Rochelle quarter. The chief centers of this activity are in the Bay of Aiguillon at Esnandes and Marsilly, and along the irrigation canals in the Charron district.

Oysters, in large numbers were formerly bred and dredged along the Charente coast. These were of two sorts: PORTUGAISES and MARENNES the latter being bred almost solely of the Ile-d'Oleron. More than 300 million PORTUGAISES were gathered annually in the vicinity of La Rochelle and Ile-de-Re. The production of the MARENNES exceeded even this figure, rising as high as 550 millions, a substantial part of this output being exported to Spain and Switzerland.

Cod drying is a subsidiary industry which has of late achieved prominence. This is carried on principally at La Rochelle-Pallice..

Fish byproducts are utilized for manufactured artificial fertilizers, and at La Rochelle are two factories established for this purpose. Quantities of fish meal for cattle feed are also produced at these centers.

Fishing is known to have suffered more acutely from war time restrictions than perhaps any other occupation connected with the production of food. Unconfirmed reports state that the national catch has fallen to something around 1/7 of the pre-war figure. Whether this estimate is correct or not, it has been authoritatively stated that a substantial proportion of all fish now landed finds its way to the homes and local markets of the fisherfolk. Little fish reaches the common market.

Wine Industry:

Some 380,000 tons of wine were formerly produced here, a quantity representing about 7-1/2% of France's total output. Of this amount not less than one third of the harvest was gathered in the Charente-Maritime, while the Charente and Vendee totalled nearly half of the gross output. COGNAC, on the river Charente, is the most important single center connected with vine growing in the whole region. In and around this town much of the locally grown white wine is distilled into the famous brandy to which Cognac gives its name. Red wine, a speciality of the Vienne, is produced mainly in the Poitiers district, while the white wine of TROIS-MOUTIERS, near Loudun, is well known.

Dairy Industry:

Cattle rearing, which is also carried on in the Charente-Maritime, is perhaps less important than the dairy farming. This department, together with the Deux-Sevres, is the outstanding dairying center of the region, and in it are situated some large and good co-operatives. Apart from the many independent co-operative dairies in the Charente-Maritime, there were formerly a number of such centers affiliated to the Central Union des Charentes et du Poitou.

Milk yields are not exceptional, the average for the region being approximately equal to that of France. Milk production in 1937 was well over one million tons, representing nearly 8% of the French output. Cheese production was everywhere negligible, but the butter output of 28,000 tons, about 13-1/2% of France's gross production, was high. The Charente-Maritime and Deux-Sevres produced about 50% of the regional output.

In the north of both Charente departments the milk produced is transformed, at modern cooperatives, into excellent butter. In these districts, as well as in the Deux-Sevres, the installation of centrifugal cream skimmers has been largely responsible for the big extension of milk products manufactured in the region. It is alleged that the quality of the butter here is such as to rival the produce of even Normandy or Brittany.

Cheese production, such as it was, was mainly located in the Charente-Maritime. It may be noted that before the war special cheeses known as TETE-DE-MORT were manufactured here at a big dairy at Marans. In addition, near this center, at Charron limited quantities of a cheese called DU CURE were made. These milk products were partly consumed locally and partly exported to Paris and other districts of France, and abroad.

The manufacture of casein, extracted from the residue of curds, provides an important side-line in dairying. The residue from butter making is usually treated for the purposes of "caseum" extraction, which, when dried, becomes casein, for which there are many commercial uses. This process is usually carried on at centers attached to the dairies, and quantities of casein are exported from La Rochelle.

The Dijon Region

Departments: Yonne
 Cote-d'Or
 Haute Saone
 Nievre
 Doubs
 Territoire-de-Belfort

The northern part of the department of Yonne is in the province of Champagne. The southwestern part is in the province of Orleans, the southeastern part is in the province of Bourgogne.

The department of Nievre takes in the whole province of Nivernais.

The department of Cote-d'Or is in the province of Bourgogne, but its northeastern part protrudes into the province of Champagne.

The departments of Doubs and Haute-Saone are in the province of Franche-Comte.

The Territoire-de-Belfort is in the province of Franche-Comte.

General:

The forested areas in this region cover approximately 30% of the total surface in each department, compared with less than 19% for the country as a whole. Altogether this represents some $9\frac{1}{2}\%$ of France's total forests. In the department of Nievre lie the forested and granite mountains of Morvan, one of the most picturesque parts of France, in which Mt. Prenelay is situated.

The population of 1.5 million, is somewhat unevenly distributed averaging 245,000 people to a department, although formerly there were over 330,000 in the Cote-d'Or and as few as 100,000 in the Belfort. Excluding this latter department the percentage of gainfully employed men and women who worked in agriculture is somewhat above the average, being over 40% (but falling to 13% in Belfort).

Land holdings tend to be small. Approximately 70% - 75% of all holdings being under 10 hectares in all departments, a distribution similar to that in the country generally. The number of large estates, on the other hand, chiefly in Cote-d'Or, Nievre and Yonne, the chief vine growing areas of the region are above average, a tendency most marked in respect to holdings which exceed 100 hectares. A large percentage of all estates are farmed by their owners - occupiers, in the Haute-Saone as many as nine-tenths. Metayage is negligible, but tenancy is rarely below the norm of 30% and in the Cote-d'Or nearly 50% of all holdings are tenanted.

Except in dairying the standard of farming prevailing is below the French average. Tractors which totalled less than 700 for the whole region represented but 2% of France's entire resources. Fertilizer usage is small. The amount of nitrogen fertilizers applied to arable, market gardens and vineyards being negligible, that of phosphates being low save in the Doubs and Belfort, and that of potash, except in Belfort again, poor.

Yields, generally, were also exceptionally low, only in the case of potatoes did the crop exceed the relatively poor French average.

Agriculture:

Dijon, a predominantly forested region has few characteristics in its agriculture which distinguishes it from other parts of France. Wheat, oats and potatoes are produced in fair quantity, and wine, particularly the Burgundian product is of high quality. Good livestock is reared on the pasture lands, which, save in the Yonne and the Cote-d'Or, is extensive.

Small areas of market gardens are found in every department, mainly around the river valleys. Vines, which are grown extensively in the Yonne and Cote-d'Or total but 3% of all French vineyards, and tend to be small everywhere. Only in the Cote-d'Or does a high production of these holdings exceed 2 hectares.

Cereals:

Except in the Cote-d'Or and Yonne, which produced about 2/3 of the total harvest, wheat production was relatively small. The Nievre formerly contributed about 60,000 tons to the gross output of 390,000 tons, which generally speaking tended to be concentrated on the arable lands, near the river valleys.

Rye production was negligible, the pre-war figure of 5000 tons in the Haute-Saone being the highest of any individual department.

Barley, chiefly grown in the wheat areas, totalled around 50,000 tons, and was formerly of sufficient quantity for several breweries to be established in the Cote-d'Or and Yonne.

Oats, the greatest quantities of which are again harvested in the wheat growing departments, are sown extensively. This crop, which averaged some 340,000 tons, represented over 7% of the French output, and was fed mainly to livestock within the region.

Sugar Beet:

Sugar beet is grown in only two départements, the Côte-d'Or and Yonne, and represents about 3% of the French total. The output of beet from the Côte-d'Or which produces nearly double the quantity of Yonne, partly fed the distilleries scattered through the department, and was partly used in the manufacture of biscuits, spiced bread which are important food processes undertaken in and around Dijon.

At the Yonne, where sugar beet production is smaller, and concentrated primarily in the cantons of Brienne, Bray-sur-Seine, Flagny and Seignelay, the crop feeds the sugar mills of Brienne, Bray-sur-Seine, and Montereau.

Potatoes:

Substantial quantities of potatoes are harvested in every department, in the plains, and on the lower foothills both of the plateaux and the mountains. The total crop, formerly, amounted to some 700,000 tons.

Rape, colza and small quantities of tobacco were produced before the war chiefly in the Côte d'Or and Haute Saône.

Livestock:

Cattle predominate, numerically, among the livestock, which is reared in every department. Before the war nearly three quarters of a million of cattle, primarily Nivernais and Charolais stock, were in the region, nearly 5% of France's total numbers. In Nièvre, the most outstanding department from the point of view of numbers, cattle fattening had reached great proportions.

On the plateaux and rich pasturelands of the Côte d'Or, Nièvre and Yonne, where Charny is a specially important center, horses, and especially mules, are bred extensively. Nièvre, the chief mule producing department is also famous as the home of the Nivernais breed, noted for their value as draught animals.

Sheep, which numbered some 370,000 represented 4% of the national total.

Pigs, numbering some 250,000, are scattered through the departments and are bred mainly for local domestic consumption.

The Yonne is the one department, where poultry rearing is of significance, and geese and chickens are reared here in substantial numbers. Gatinais chickens are most widely reared, and their eggs are important commercially.

Geese are fattened at La Puisaye, and turkeys in the Gatinais. A specialty was formerly made of rearing-ducks, pigeons and rabbits in the arrondissement of Sens. The one other district of importance is Le Louhannais, an extension of Bresse, whence poultry is both exported and, on a relatively small scale, canned.

Food consumption:

Before the war it was estimated that the wheat and rye surplus amounted to around 74,000 tons, and potatoes to 125,000 tons. Sugar was somewhat deficient and fats too, although the meat surplus was about 14,000 tons. In the milk the balance was over 30,000 tons to the good, but wine was lacking by over 50,000 tons.

Bearing in mind the food restrictions which should have curtailed consumption, reducing deficits and increasing surpluses, the current provisional estimates are thought to be as follows:

The balance of wheat and rye is around 65,000 to 70,000 tons, and that of potatoes over 100,000 tons. Dijon is virtually self-supporting in sugar, and similarly in meat, of which there is a small balance, somewhat less than in the pre-war years. The milk balance, owing to a vastly reduced consumption among the civilian population, is theoretically more than in the 1935-38 period. It is, however, known that much milk is utilized for black market butter and probably cheese, so that the favorable balance of over 40,000 tons may be a high estimate. Wine is still heavily deficient, owing partly to the impact of heavy requisitions and partly to reduced crops. Possibly, the most serious shortage in Dijon is in the fat supply, the ration of which is known rarely to be honored. All in all, however, because of the rural aspect of this region, Dijon is likely to be less severely hit by war conditions, than the more industrialized regions of France.

Food Industries:

The Dijon Region has a varied food industry. The food processing, with exception of grain milling, is not carried on widely in the region, the Cote d'Or department being the one department where manufacturing activity is at all intense.

Grain Milling:

Flour mills are fairly well distributed throughout the region, the number of mills in the different departments with a daily wheat

capacity of over 50 quintals being:

Cote d'Or	13
Doubs	19
Nievre	28
Haute Saone	17
Yonne	9
Territoire-de-Belfort	2

The majority of these mills have a capacity of between 100 and 250 quintals. Four mills in the region have a daily wheat capacity of over 500 quintals:

- (1) Grandes Minoteries Dijonnaises Dijon
- (2) Dormoy Freres Fougerolles (H-S)
- (3) Petit Freres Port-sur-Saone (H-S)
- (4) Gaston Perrot Sens

Miscellaneous Industries:

The manufacture of biscuits is of some significance. Dijon particularly is noted as a center of this industry, which is also carried on in Besancon, Avallon, Vesoul and Montbazon (Haute-Saone). There is also some manufacture of chocolate, and special mention should be made in this connection of the important factory of Peter Cailler Kohler at Pontarlier.

Wine Industry:

The chief source of wealth of several departments is the production and export of wine. This is specially true of the Cote d'Or, from where wines in the vicinity of Beaune, Cote de Nuits and Dijon, red and white wine, are made.

Vineyards in the Yonne are concentrated chiefly to the west of the department, notably in regions which stretch from the Cote d'Or district to the Aube. The vineyards of Tonnerrois and Auxerrois are reported to produce the finest red wines of lower Burgundy and those of Chablis, the finest white wine. The wine of Cote St. Jacques (Yvoigny) has also a high reputation. In the Nievre vine growing centers are in and around Clamency and the Loire, the vin blanc of Pouilly on the Loire being one of the best products of that vicinity.

Market Gardening and Canning:

The production of fruit and vegetables which are not outstanding quantitatively, came mainly from the river valleys of the Cote d'Or, Nievre, and Yonne, La Puisaye being the chief center in the latter department. The

green vegetables cultivated in the neighborhood of Dijon and Auxonne are exported as "primeurs." Onions here are especially good.

Carrots, onions, cherries, pears and plums are among the more plentiful produce. Cider apples take special prominence in Yonne.

From the cherries grown in the Haute Saone and Belfort, Kirsch, the cherry brandy of world fame, is distilled and widely exported.

The last important, but most scarce product in this category is the cassis, black currant, which flourishes in an area stretching from Chagny to Malain. This fruit feeds important local distilleries, at which "Creme de Cassis de Dijon" is made. Britain was formerly a great importer of this commodity.

An indication, that the overall production of market garden produce is not high, lies in the fact, that the canning industries in the Dijon region are practically undeveloped. A small amount of fruit and vegetable canning is carried on in the region, and there is a small production of "sauerkraut" in the department of Doubs and the Territoire-de-Belfort.

Sugar Beet Production:

Sugar Beet production is confined to the departments of Cote d'Or and Yonne, and there are only three sugar factories in the region situated at Aiserey and Brazey-la-Plaine (Cote d'Or), and Brienon-sur-Armancion (Yonne).

Alcohol Distilleries and Breweries:

Alcohol distilleries are numerous in the eastern part of the Cote d'Or and the Yonne. Some of these utilize beet, but apple distilleries are the most frequent. Considerable quantities of cider are produced in the Yonne, Auxerre being an important center.

There are some breweries in the Territoire-de-Belfort, the Doubs, and the Cote d'Or. The largest of them are located at Sochaux, Bensancon, Belfort, Dijon and La-Chapelle-sous-Rougemont (Territoire-de-Belfort).

Dairying:

Dairy farming formerly flourished in the department of Doubs, in the region of the plain, and to a lesser extent on the lower, less exposed slopes. In this department, milk production which totalled as much as 2,000,000 hectoliters, represented over 5% of the country's total production. Milk yields per cow were above the average in every de-

partment, but the Nievre, and in Doubs it nearly topped the 3,000 liter limit. Butter production was nowhere high, the greatest output of 2400 tons in the Haute Saone representing over one third of the region's total.

Cheese production was formerly high, totalling in all some 10% of the French output, well over half of which was made in Doubs alone, and one quarter in Haute Saone. Up till the outbreak of the present war, cheese production, and the making of Gruyere in particular, had become increasingly important. In this department producers have turned more and more from cereal to dairy farming, until it was alleged, that Gruyere production had become the pivot of the rural economy in the Doubs. Cheese is made mainly in mountain chalets, the construction of which was greatly facilitated by a law which granted agricultural credit for this purpose.

Farmers, combine into communal co-operative groups known as "Fruitieres" in order to make their cheese from the locally produced milk. Modern, up to date methods are said to be employed in those centers.

Apiculture:

Bee keeping is widely practiced in the Yonne. Bees are kept here not so much for their honey as for the commercial value of the actual swarms for which there is a great demand among farmers in Gatinais.

The Montpellier Region

Departments: Lozere
Aveyron
Herault
Aude
Pyrenees-Orientales

The departments of Lozere and Herault are in the province of Languedoc.

The department of Aveyron is in the province of Guyenne at Gascogne.

The department of Aude is in the province of Languedoc, but its southwesternmost part protrudes into the province of Foix.

The department of Pyrenees-Orientales is in the province of Rousillon, its northernmost part protrudes into the province of Languedoc.

General:

The northern part of the region, including the departments of Aveyron and Lozere and part of the Herault, forms the southern edge of the Massif Central. The cultivation of crops in this area is insignificant, but there are extensive sheep pastures in the mountains and valleys. There is little industrial activity in the area.

In the south, the region enters the fringe of the Pyrenean area of high, folded ranges. Here again there is little industry, though iron ore and talc are mined. The mountain torrents are an important potential source of hydro-electric power, which as yet has not been fully developed.

The coastal plain and its surrounding foothills, which lie between the two mountainous areas, have a greater concentration of population. It is an agricultural country, specializing in the cultivation of vine. Substantial quantities of wine are produced, and in the main towns there is a considerable cooperage industry. There is also a large number of firms engaged in the manufacture of agricultural machinery. Sete, the one important port of the region, and the second French commercial port of the Mediterranean, lies within this area.

Industrialization:

The Montpellier region is not highly industrialized. There is, however, a certain amount of industrial activity and certain individual plants are of more than local significance. Among them are the iron and steel works at Decazeville (Aveyron), the zinc plant at Viviez (Aveyron), the mineral oil refinery at Frontignan, near Sete (Herault) and the loco-

motive, and rolling stock repair works at Beziers (Hérault). Many of the miscellaneous industries are directly connected with agriculture. In the coastal region there are many manufacturers of industrial machinery and the cooperage industry, already mentioned meets a steady demand for barrels for the wine industry. The tanning industry, and the manufacture of gloves, which are centered at Millau (Aveyron), owe their origin to the flocks and herds on the extensive pasture lands of the district.

The metallurgical industry of the region is not highly developed. While it is true that there are coal deposits in the Aveyron and the Hérault, and iron ore in the Pyrénées-Orientales, these deposits are not found in very great quantity, and were not extensively exploited in the immediate pre-war period.

Small engineering works were, however, to be found in most of the principal towns of the area, and Beziers (Hérault), Carcassonne (Aude), and Montpellier (Hérault) in particular specialized in the manufacture of Agricultural Machinery. There is a concentration of the chemical industry in the Etang de Thau area, but no important plants are to be found outside this district.

Agriculture:

Farming constitutes the principal economic activity in all these departments. In Hérault and the Pyrénées-Orientales it occupies nearly half the population, in Aude over half, in Aveyron more than two thirds and in the mountainous Lozère four-fifths.

The climate of the plains is typically Mediterranean with heavy rainfall in October and November, but practically none in the summer months. Winter brings snow to the mountains, but hardly even a frost to the plain. Summers are the hottest anywhere in Western Europe with a mean July temperature of 76° F.

This type of climate specially favors vine-growing, since grapes prefer warm, dry weather during their period of formation and ripening. Except for certain specialties in the outlying districts, the Roquefort cheese industry in Aveyron and the fruit and market gardening of Perpignan, the agricultural activity of the whole area centers around viticulture. In Hérault, for instance, more than four-fifths of the agricultural holdings are principally concerned with vines, while the five departments as whole provide more than a third of the total French wine production.

Because of the peculiar features of farming, sheep grazing, viticulture and market gardening, very little of the ordinary agricultural machinery is used, tractors, mowers, reaper-binders, etc. of importance, however, are the special implements of the vineyards and of wine-making spraying apparatus, wine pressers, weighbridges, stills, vats and barrels. These are manufactured locally at Beziers and neighboring towns.

Fertilizers are scarcely used in Lozere and Aveyron, but plentifully in the vineyards and market gardens of the plain. Normally sources of supply are at hand, the large superphosphate factories at Sete and the synthetic nitrogen plant at Toulouse (just outside the region), while potash is imported by coastal steamers from Spain. Sprays are widely used, copper sulphate being manufactured at Sete.

The chief corn crops are wheat and oats in Aveyron and Aude and rye in Aveyron and Lozere, but the local area under all crops combined (excluding clover and lucerne) is less than the vineyards acreage. Chiefly because of the lack of water, yields per acre are low, in Lozere and Aveyron only half the none too high French average and in the other three departments only three quarters of it.

Apart from some cattle and pigs in Aveyron, the only livestock of importance in this region are sheep, which feed on the barren "causses" and "garrigues." Aveyron has half a million sheep, and the other four departments another half million between them, altogether one-tenth of all France's sheep. The predominant breed is "CAUSSES" sheep, hardy, but a good milker, valued for cheese making. The average annual yield is some 85 liters (19 gallons) per ewe.

This region was always deficient in food supplies. It depended on "imports" from other parts of France for more than half of its bread grain, for some of its meat and fats and all its sugar. In return, it exported Roquefort cheese, wine and large quantities of fruit and vegetables.

Grain Milling:

There is no great variety of food processing carried on in the region. A large number of small flour mills is to be found throughout the five departments, but there are no outstandingly large flour mills in the region.

Wine Industry:

The most numerous and important food processing plants are the wine making centers and distilleries. In 1938, there were 285 distilleries, and a much larger number of wine presses.

Vine has been cultivated in this region since Roman times. The plain of Montpellier presents a picture of continuous vineyards for some 80 miles. Cultivation extends westward, into Aude and on a lesser scale into Pyrenees-Orientales. It is a mass production industry providing almost exclusively "Vin Ordinaire," Often the wines of Herault are fortified with Algerian wine, which has a slightly higher alcohol content though a rougher flavor. A few specialty wines are, however, found in the southwest of the region, the well known wines of Roussillon and the unique products of the Pyrenean valleys, which, having a singular sweetness and high alcohol content, are reserved for the making of liqueurs. A brandy industry is centered in Beziers, and besides this, several hundred distilleries for the production of industrial alcohol are scattered throughout the plain, using the inferior grapes and the residues from the wine presses.

In several pre-war years, "vin ordinaire" fetched extremely low prices, and over production became so chronic that the government intervened. It prohibited the planting of new vineyards, subsidized growers to destroy a proportion of their vines and directed a substantial percentage of each year's crop to the distillers. This was arranged so that the large-scale growers had to surrender for distillation (at low prices) a larger proportion of their output than the small ones, the intention being to reserve the more lucrative market (wine-making) for the peasantry. In fact, the Government hoped that some of the big men would be forced out of business so that their vineyards could be divided among small cultivators and thus help to relieve unemployment.

Since the war, the situation has been reversed and wine has been in short supply. Unfavorable weather; hopelessly insufficient supplies of copper-sulphate and other sprays, together with shortage of labor, have conspired to produce markedly sub-normal crops, that of 1942 being reported as only 60% of average. No doubt a large number of long discarded wine-presses have been brought into use in peasant's homes in order to evade rationing, so that the deliveries of grapes to the commercial and co-operative presses will have fallen of more than the actual crop.

Dairy Industry:

There are few dairy cattle in those departments, the milk yield is low, only 900 liters (200 gallons) per cow in Lozere and Aveyron, and is used either for local liquid consumption or for rearing calves, there being a trade in slaughter cattle from the mountains. There is little butter or cheese making, local consumption of fats being exclusively in the form of oil.

The milk from the numerous "CAUSSES" sheep is valued for cheese making. The cheese makers of Roquefort in Aveyron, using exclusively ewes milk, have been manufacturing their famous product since the middle ages. The special creaminess and high protein of ewes milk give Roquefort cheese its distinctive flavor and nutritional value, while much also is said to depend on the slow maturing in the cool rock-cellars and natural eaves of Roquefort and neighboring villages. Annual production is about 10,000 tons. (including some produced in adjacent departments), of which half is exported.

Fruits, Vegetables and Canning:

Market gardening prospers in the sheltered, well watered valleys, behind Perpignan and in other places where irrigation has been undertaken. The output of the Pyrenees-Orientales includes half France's peach crop, two-thirds of her apricots, some oranges, almonds, potatoes, lettuce, French beans, cauliflowers and globe artichokes. Narbonne is noted for its honey. Aveyron for its green walnuts and chestnuts, in which it stands second only to Corsica. Lozere includes the fringes of the mulberry country and its milk industry. Herault and the Pyrenees-Orientales together produced some 600 tons of olive oil annually.

The canning of tomatoes and other fruits as well as the preparation of dried plums, should be mentioned in this area, although the canning establishments are small in comparison with other regions in France.

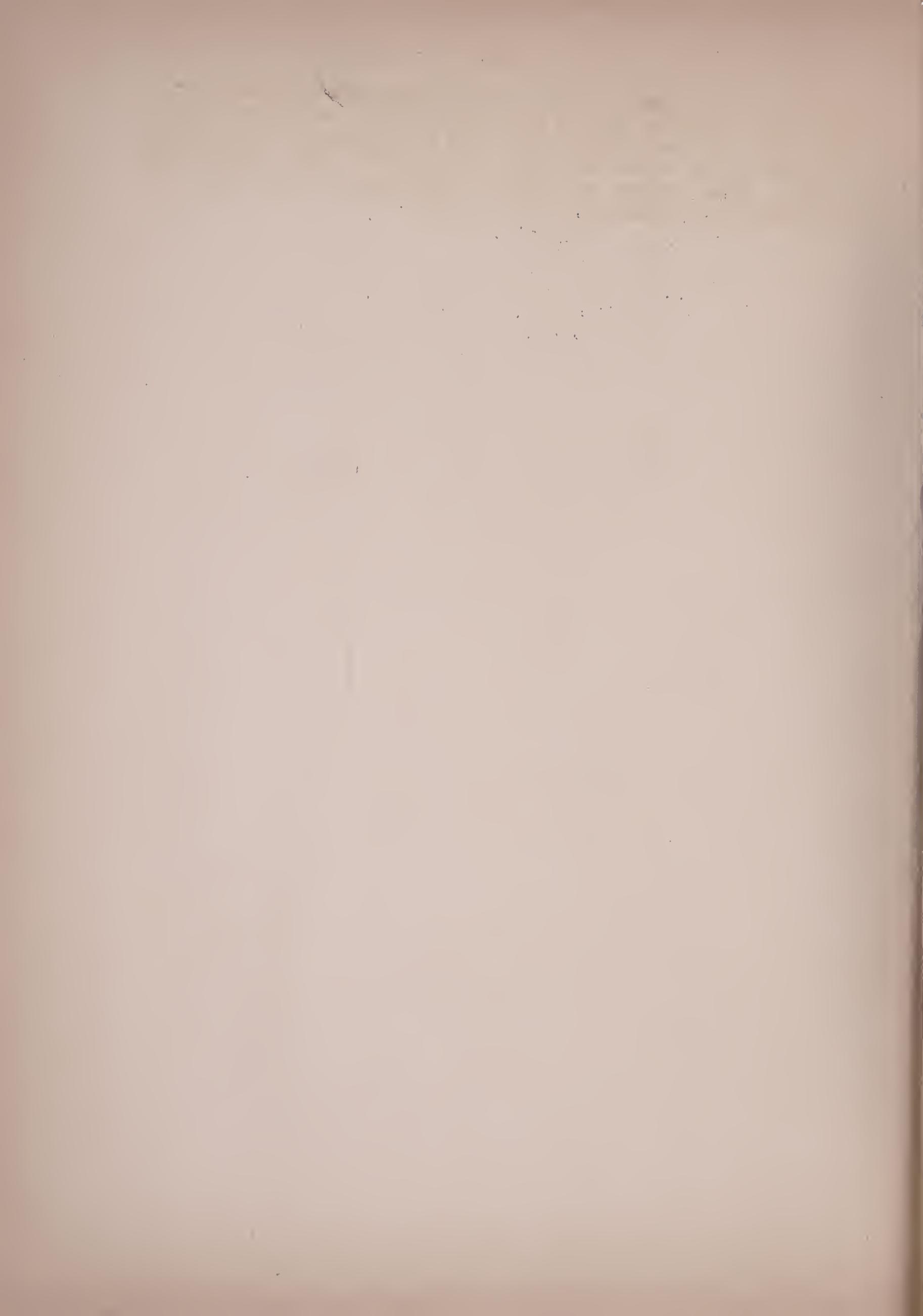
Fishing:

Only a small amount of fishing is carried on along the coast, the recorded catch passing through Sete and Port-Vendres accounts for only 2-1/2% of the total French catch. Some 2000 boats, mostly very small, are engaged in the trade and some 3300 fishermen, equipment and technique being still very primitive. The principal catch is of sardines and anchovies, which are canned and in part exported. Trout fishing is available in most of the mountain streams from the Cevennes to the Pyrenees.

Food Consumption:

The peace time diet was markedly Mediterranean in character. Meat and vegetables cooked in oil with liberal flavoring of garlic, onions and paprika. Fruit and vegetables (especially aubergines and globe artichokes), fish, snails, macaroni and beans featured prominently. Consumption of potatoes and dairy produce was below the average. The nutritional value of the diet compared favorably with that of other French regions and reflected the relatively high standard of living of both urban and rural population.

Since the war the urban centers of the region have suffered more severe food shortages than in other French towns of similar size, because their own agricultural hinterland could not cover their needs, and supplies were not forthcoming regularly from other parts of the country. Thus, reports of shortages, occasionally acute, have come from Montpellier, Carcassonne and Perpignan,







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